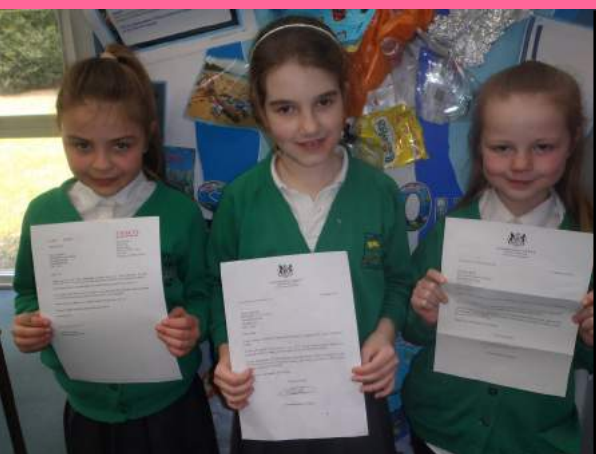
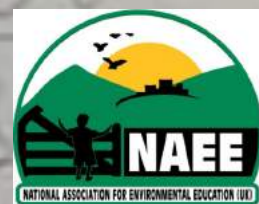


Environmental Education

GREEN LITERACY

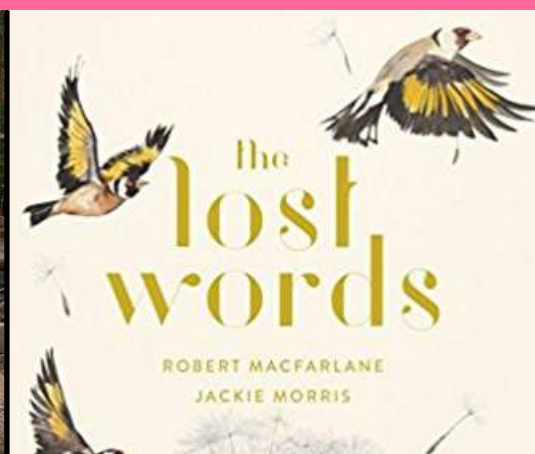
Reading and writing in and
about the environment



Persuasive writing about plastics



Outdoor literacy



Books about nature

National Association for Environmental Education (UK)

NAEE supports a wide range of professional educators to help them improve the quality of their teaching and their students' learning, in relation to environmental and sustainability issues.

ALL MEMBERS RECEIVE THESE BENEFITS:

- *Environmental Education* journal 3 times a year
- Resources and information for teachers and educators
- Network with outdoor and environmental education specialists
- Share your ideas with NAEE online, twitter, facebook, LinkedIn, pinterest
- NAEE works with key related groups in the UK and worldwide

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NAEE is a Charitable Incorporated Organisation [Charity No. 1166502] that 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. Teachers are encouraged into the Executive; for more details contact info@naee.org.uk.

GROUP COLLABORATIONS: NAEE is very much interested in doing things alongside others with the same or very similar missions/goals. Some of these groups include:

United Kingdom: Archeology Scotland; Association for Science Education; Birmingham Botanical Gardens; British Council for Archaeology; Black Environment Network; Council for Learning Outside the Classroom; Geographical Association; London Environmental Educators' Forum; Martineau Gardens; Mount Pleasant School Farm; National Savers; Rotary International (Britain & Ireland); Think Global; TIDE~global learning; Women's Environmental Network; Youth Hostel Association.

Overseas: Australian Association for Environmental Education; Children and Nature Network USA; Forest and Bird New Zealand; Green Teacher; New Zealand Association for Environmental Education; Nature Club of Pakistan; North American Association for Environmental Education; Roots & Shoots Shanghai.

GET INVOLVED: If you are a teacher with experience in environmental or outdoor education, especially in pre-school or secondary school, and would be interested in writing an article for our termly *Environmental Education* journal, contact info@naee.org.uk or Henricus.peters@gmail.com.

BURSARIES: Thanks to the generosity of the late Hugh Kenrick, NAEE offers bursaries of up to £400 for schools in the West Midlands to take their pupils to visit an environmental education centre. Visit naee.org.uk/apply-for-a-school-bursary for more information.

National Association for Environmental Education (NAEE UK)

Registered Charity No. 1166502



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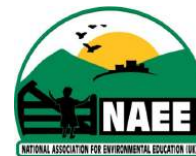
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Cover photos Main picture: recounts written by children from Greet Primary School, after visiting Mount Pleasant School Farm, image Catherine Anderson. Smaller pictures: children from Springfield Junior School proudly holding up their replies from 10 Downing Street and the CEO of Tesco, image Amy Norton; reading time in a Swedish outdoor nursery, image J Robertson; cover of *The Lost Words* by Robert Macfarlane & Jackie Morris.

All photos within articles by the author, unless otherwise stated.

***Environmental Education* is the termly journal of the NAEE. Views expressed in the articles of this journal are those of the authors and do not necessarily represent those of NAEE.**

In this edition of *Environmental Education*, we are thrilled to launch our new 'green literacy' section, focussing on reading and writing in and about the environment. Teaching and learning outside can make children feel more relaxed and engaged, the outdoors provide a wealth of stimuli, and experiential hands-on activities can fire up children's imaginations for writing. There are many children's books that lend themselves to being read outdoors; and the natural world has inspired poets for centuries. Environmental issues link well to writing, for example writing to persuade people to take positive action or writing stories set in the aftermath of an environmental disaster.

One of the toughest challenges editing this edition was coming up with a name for the new section! The initial idea was 'Eco-literacy'. As a teacher, I think of literacy as reading, writing, speaking and listening, so eco-literacy would be literacy with an ecological basis. However, I soon realised that ecoliteracy (more often written without the hyphen) is already a term. It was coined in the 1990s by environmental educationalists, and referred to the need for people to be more literate about the environment, i.e. understanding the systems and processes involved and using this knowledge to live more sustainably. In his article on page 5, David Whitley argues that ecoliteracy has evolved to encompass imaginative aspects (through the arts, including literacy/literature), so that an emotional connection to the environment can develop.

In the light of all this, it was decided that we would need a different name for the section. We toyed with ideas such as 'environmental literature', 'EE through books' and 'eco-criticism', but it was decided that the phrase 'green literacy' covers reading, writing, speaking and listening with students outdoors (i.e. literacy *in* the environment) and using environmental issues as a stimulus for writing fiction, non-fiction and poetry (literacy *about* the environment).

Julie Williams's article on page 8 illustrates how a real-life issue can be used as a spark for persuasive writing and can encourage pupils to think about the changes they can make to help solve a current environmental problem. They used the problem of marine plastic waste, but as she highlights in her final paragraph, there are

many environmental issues that could be used as a starting point for writing. Writing for a real purpose can motivate children more than an obviously hypothetical scenario conjured up to learn a particular type of writing.

On page 6, educational consultant Juliet Robertson gives ten reasons for writing outside and on page 7 she suggests some resources for teaching literacy outdoors. We have more green literacy ideas in Webwatch (page 25); and a review of the excellent book *The Lost Words* by Robert McFarlane and Jackie Morris, which focusses on 'natural' words that have been removed from the Oxford Junior Dictionary, in an effort to try to revive them.


Among the other articles are our regular Young Writer feature (page 10), where Louis Driver writes about what can be done to inspire the next generation of naturalists; and an inspiring article (on page 18) from a school where students undertook a legacy project to protect and honour a beloved maple tree in their grounds — based in the USA but there are some great, transferrable ideas.

Juliette Green

As we add the brand new green literacy pages to the journal, we reflect on one of the editorial aims of the UK National Association of Environmental Education, which is to celebrate what is active and happening within our own islands — asking how environmentally literate we are and what further might we do to become more so — is a good challenge.

We also 'take flight' with recognition of 2018 as Year of the Bird, via the review of *The Lost Words* by Robert Macfarlane and Jackie Morris, the article on barn swallows in Japan, and our own Webwatch.

Living in China, I very much appreciate and value bird life. They are slowly returning to the cities, partly due to positive environmental action, supported across local and national policy and practice agendas. We hope that these changes continue and we are excited about the potential impact on eco-literacy, here in China and everywhere around the world.

Thank you for reading and caring about environmental education. 


Henricus Peters

From the President Professor Justin Dillon

Mayer Hillman's views¹ about the impact of climate change are brutally frank: *"The outcome is death, and it's the end of most life on the planet because we're so dependent on the burning of fossil fuels. There are no means of reversing the process which is melting the polar ice caps. And very few appear to be prepared to say so."* Hillman knows his stuff, having spent 60 years looking at what is known about human impact on the environment. He's not a fan of individual or even national action, simply because the scale of the problem is too large. The only way out is for a global shift *"to zero emissions across agriculture, air travel, shipping, heating homes — every aspect of our economy"* as well as to reduce the world's population.

In the same week, Emmanuel Macron, the French President, took US President Donald Trump to task for his

lack of action on climate change. Speaking to Congress, Macron asked: *"What is the meaning of our life if we [are] destroying the planet while sacrificing the future of our children? [...] Let us face it. There is no planet B."* An increasing number of politicians seem to be getting the message, although whether they actually do anything remains to be seen. I used to think we got the politicians that we deserved but I realise that is no longer true — we need better politicians or a better system of governance.

We need to increase the ecoliteracy of our entire population, particularly our policy-makers and politicians. That's an enormous challenge but it's not impossible and the articles in this edition give us more than hope; they give us concrete ideas. 

Reference

¹ The Guardian interview 26th April 2018. [tinyurl.com/yd8blthx](https://www.tinyurl.com/yd8blthx)

Profile | NAEF Fellow Ben Ballin

NAEF began its Fellows scheme in 2017 to recognise the significant contribution that individuals are making to environmental education through their work and so that the Association can work closely with them to further support and encourage environmental education in the UK.

Why did you join NAEF?



I first got involved as a reader of the journal *Environmental Education*, many years ago. It is always interesting, grounded and informative. Several organisations that I have worked for over the years both subscribed to it and contributed occasional items.

Tell us about your background. Why were you selected to be a NAEF Fellow?

I have been active in the field of Development Education and ESD since returning to the UK from a spell as a teacher in Kenya in the early 1990s. From this, I have also become very active as a geography educator, especially in my role as a primary consultant to the Geographical Association. I was selected as a fellow because of my work as Chair of the West Midlands Sustainable Schools Network.

Who are your role models in the field of education?

There are a great many! The late, great Jerome Bruner is someone I look to constantly for inspiration, and as a reminder of what an education based on the needs of a learner can really look like. In this country, the work of Professor Robin Alexander, and especially the

Cambridge Primary Review, has offered real clarity and rigour, while championing a broad and balanced education that takes the needs of humanity and the environment seriously. Professor Bill Scott at NAEF and the Centre for Research in Environmental Education is always a great provocateur and source of encouragement, with whom I share an enthusiasm for critical pedagogies. They all share a passion for education and a really clear, unfussy way with words.

Who are your role models in the environmental field?

Well, there are amazing figures around the world, such as Wangari Maathai in Kenya or Arundhati Roy in India, who have really taken on the cause of the environment, but made powerful connections to wider questions of quality and justice. To them I would add all sorts of less visible people, many of whom I have been lucky enough to meet, like Kenyan activists practicing sustainable agriculture in the Ngong Hills, to my friends at the National Environment Agency in The Gambia – right there on the front line of climate change – and of course many good folks in the UK, including teachers and people in my own local community in Birmingham. Role models can take many forms.

What does NAEF do well?

It keeps the profile of environmental education visible, including championing it within wider debates about education and sustainability. It argues its distinctive case and contribution, and forms a hub around which others can gather.

Please share a quote you like...

"Reality is made, not found" — Jerome Bruner. 🌍

Ben Ballin is an education writer, trainer and consultant specialising in global learning, sustainability, geography and drama. He currently chairs the West Midlands Sustainable Schools Network.

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Green literacy | Ecoliteracy

Why does environmental education need imaginative literature?

David Whitley

Ecoliteracy was a term that gained currency in environmental education from the late 1990s. During the period leading up to this, the concept of 'literacy' had been extended to encompass a whole range of new areas – even including 'emotional literacy' – where existing cultural norms seemed inadequate. In response to our prolonged and deepening environmental crisis, the term ecoliteracy began to circulate in educational contexts to address pervasive gaps in knowledge deemed essential for children's development as environmentally aware citizens. Although the term was frequently criticised for being too broad, its all-encompassing vagueness was perhaps useful in some respects, in that it could be adapted flexibly to nearly any context. What has been perhaps less generally recognised, however, is that, like its equally all-encompassing corollary 'sustainability', the

concept of ecoliteracy carried a strong bias towards the cognitive and instrumental aspects of our complex relations with the natural world. It did not engage as fully with the emotional and imaginative aspects of those relations.

It is here that the arts play a vital role, of course. Perhaps the deepest rooted of all the arts, from an environmental point of view, is poetry, which has always asserted a strong, primary connection between human consciousness and nature. As even that most sophisticated of American writers, Wallace Stevens, put it, "*there must be something of the peasant in every poet*". Poets enable us to feel our connection with the natural world not only through disseminating intimate knowledge of the animals, plants and processes of change we are caught up in, but also through images, rhythms – through literally breathing life into words. This is language that speaks to us through the body, in other words, which remains rooted in nature in a way that our minds sometimes forget. In America there is a long tradition of poets – from

Thoreau and Emerson through to Wendell Berry and Gary Snyder in more recent times – who have both written in poetic forms and mounted powerful discursive arguments about how the primary sources of our being in nature are distorted and threatened by aspects of development in the modern world. In Britain, the tradition that runs from Wordsworth, Clare and the Romantic poets through Ruskin to recent writers such as Ted Hughes, Kathleen Jamie and Alice Oswald, has performed a similar function. Britain also has an extraordinarily rich tradition of nature writing, combining factual, scientific knowledge with personal experience and feeling that draws on a range of poetic modes for its expression. This kind of writing is enjoying a boom in popularity at the moment.

It's not only in poetic forms that the arts have a vital role in developing awareness and depth of feeling about our connectedness to the earth, of course. Children's literature is rich in both prose fiction and picture-books that explore this connection. Often this takes place in highly anthropocentric forms but, in the best literature, it also admits understanding and engagement that goes well beyond this. Novels too – from the Brontës and Thomas Hardy through to recent environmentally engaged writers such as Barbara Kingsolver and Margaret Atwood – have provided rich stories in which the ethical and emotional consequences of changing patterns of human interaction with nature have been tested in moving and memorable ways. And the visual arts – perhaps especially landscape painting – provide sensitive renderings of how we may perceive our connection to the earth that both capture particular qualities of our 'common ground' in vivid, compelling ways, and can also uncover areas of contestation and change.

The popular arts are perhaps the most neglected – from an academic point of view – in terms of their potential to foster environmental engagement. Films produced by large corporations such as Disney have been the subject of particularly stringent critique for the sentimentalized, distorted images of nature they are deemed to purvey. Yet the eminent film scholar Leo Braudy argues that popular cinema in what he calls the 'genre of nature' has provided a forum within which unresolved, often contradictory attitudes and perspectives – that are not dealt with adequately elsewhere – can be explored. In our current crisis, we surely need to be aware of the positive potential of resources available to us across the whole range of the arts, as well as developing our scientific and more practically oriented understanding fully. Ecoliteracy is a potentially highly flexible and inclusive concept that could embrace communication and understanding across the full spectrum of the modes in which we represent and try to get to grips with our current dilemmas. If the discourse of ecoliteracy has, in the past, tended to stress the more factual and functional aspects of the knowledge competencies needed to address our environmental education needs, then there is a strong case now for emphasizing the emotional and imaginative aspects just as much. The arts have just as vital a role to play in enabling a fully developed response to the challenges we face as do the sciences and more practically oriented domains such as the politics, economics and technologies needed for a sustainable future. 🌱

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David Whitley taught film, poetry and children's literature at Cambridge University. He is particularly interested in the way the arts offer different forms of understanding and engagement with the natural world. He is the author of *The Idea of Nature in Disney Animation* (2012).

Green literacy | Outdoor literacy

Literacy alive outside Juliet Robertson

This article has been adapted from blog entries on the Creative Star Learning website *I'm a teacher, get me OUTSIDE here!*

creativestarlarning.co.uk/literacy-outdoors

10 reasons why I teach literacy outside

Recently I was asked to think about why I teach literacy outside. Whilst there is a lot of focus on early years and literacy, the value of reading, writing, talking and listening outside for children and young people of all ages is significant.

1. It makes the learning and teaching of spelling and grammar fun, relevant and interesting.
2. I find that children enjoy making miniature worlds which then become the scene for a story. They can sculpt and shape their imaginative thoughts. This helps them understand about creating a setting with words.
3. The world around us provides inspiration for writing poems. The results are consistently of a better quality than poetry written in the classroom.
4. As we move from place to place, our thoughts, feelings and actions change. This helps us understand that this happens to characters in a story too. We can make our character descriptions more authentic.

5. There is nothing like reading a ghost book or horror story in a creepy place. Or making up your own. The setting doubles the atmosphere created.
6. We're not reading at our desks. Hardly anyone reads at a desk unless they are at school or in an office. Reading for pleasure should be at leisure.



Writing poetry outside. Image: Juliet Robertson

7. When we play games, we can write down instructions about how to play them. Our knowledge of being outside can be used to write advice to others, for example how to avoid being stung by a wasp or what to do if a nettle stings you. Functional writing has additional purpose and relevance.
8. Real life experiences help us develop our vocabulary and comprehension. For example, some children find vocabulary introduced in a book confusing. They may not necessarily understand that a river, lake, stream and pond are all bodies of water. Sometimes concepts that are read about in a book do not make sense until they are seen, felt or experienced for real.
9. The art of naming, describing and knowing about the world around us matters. You can learn the umpteen descriptions to describe the stem of a plant. But without observing these, it is much harder to memorise or to truly know and understand.
10. Children engage with their learning outside and this has a knock-on effect back in the classroom too, according to a recent study¹.

Outdoor literacy resources

I am often asked about resources for outdoor literacy. Here are some suggestions of books, packs and downloads that can be used to support outdoor literacy work. (Please note: this is not a recommended reading list or set of resources. Teachers need to use their professional judgement to decide whether a resource is suitable.)

Books:

- *Developing Early Literacy Skills Outdoors* by Marianne Sargent (Practical Pre-School Books, 2015). This book is part of a series which focuses on literacy, science and maths outside.
- *Literacy Outdoors* by Ros Bailey, Helen Bromley and Lynn Broadbent (Lawrence Educational Publications, 2006). A spiral bound book with 50 exciting starting points for outdoor literacy experiences; suitable for early years.
- *Let's Take a Story Book Outside* by Ruth Ludlow (Lawrence Educational Publications, 2008). Ideas for using story books with early years children as a springboard to outdoor experiences.
- *Literacy in Forest School* by Patrick Harrison (downloadable from greenbow.co.uk/literacy). Most suitable for those developing early literacy skills, in particular letters and sounds. Beautiful, friendly, inspiring book with drawn illustrations.
- *Celebrating Nature* by Gordon MacLellan (Capall Bann Publishing, 2003). Although this is not strictly a book about literacy, Gordon, aka Creeping Toad's, ideas are creative and steeped in language. For me, this book was the gateway into outdoor literacy with primary-aged children. Try Gordon's website creepingtoad.com to purchase a book in the first instance.
- *English in the School Grounds* by Brian Keaney (Southgate Publishers, 1993). This is a really dated book, but in many ways the first one published about using literacy outside. It would be brilliant if the publishers could do a 2nd edition that is up-to-date. It is suitable for all primary.



Reading time in a Swedish outdoor nursery. Image: Juliet Robertson

- *KS1 Go Teach Outdoors* and *KS2 Go Teach Outdoors* (Keen Kite Books, 2017). 64-page combinations of outdoor literacy and maths activities for those who work in KS1 or KS2.
- *Learning on your Doorstep* by Isabel Hopwood-Stevens (David Fulton Books, 2012). This book has six projects for 5 to 9 year-olds, each with six outdoor sessions, ideally suited for a woodland but adaptable to other spaces. The themes include, amongst others: Enchanted Forest, Celtic Life and Animal World. There is a springboard suggestion to begin each week, a suggested activity to take place in the woodland or outdoor space and ideas for writing activities back in the classroom. Many of the topics involve reading a simple story – which is provided – or receiving and sending messages to various imaginary characters. Most of the activities outside involve an element of reading and practical tasks such as making natural dyes from plants, creating story sticks and building mini shelters. I particularly enjoyed the behaviour advice where it arose as it painted a good picture in my head!
- *Write Out of the Classroom* Colin McFarlane (Routledge, 2013). This book is most suitable for middle to upper primary. It's more narrative than lesson plan, but lots of enthusiasm from the author.

Other resources:

- *Poetry in Motion* by Roger Butts and Juliette Green (LCP, 2003). This is a CD of reliable outdoor poetry activities for primary school pupils. lcp.co.uk/poetry-in-motion
- *Thinking Child – Over 100 Ideas for Outdoor Literacy* (2012). This digital download is super for those who like structured lessons to follow. The suggestions are doable in a school playground. This is one that I show on my courses as it's very different to my approach and therefore complements and extends what I do nicely. thinkingchild.org.uk/outdoor-literacy-pack
- *Wild About Learning – An Outdoor Literacy and Numeracy Pack for Years 1-6*: Clear photos and illustrations and a range of suggested activities for each year group. Free to download; 90 pages. wildforestschool.org.uk/wild-about-learning

- *Tales in Your Pocket* (card pack) and *Songs from the Wood* (music CD): Created by storyteller and Forest School practitioner, Grace Banks, these collectively make a lovely addition to any outdoor educator or teacher's backpack. Available from silverhaar.com.
- Council for Learning Outside the Classroom literacy packs: These are available at all key stages. Most contain 6 lesson plans and cost £22; order from lotc.org.uk.

Reference

¹ *Do Lessons in Nature Boost Subsequent Classroom Engagement? Refueling Students in Flight.* *Frontiers in Psychology*, 04 January 2018. frontiersin.org/articles/10.3389/fpsyg.2017.02253/full



Juliet Robertson is one of Scotland's leading education consultants who specialises in outdoor learning and play. She works at a national level delivering training, giving keynote speeches, leading and supporting innovative outdoor projects and writing content for websites, documents and case studies. She is passionate about enabling schools, play organisations and early years settings to provide quality outdoor learning and play opportunities for children and young people. She has written two books: *Dirty Teaching—a beginner's guide to learning outdoors*; and *Messy Maths—a playful, outdoor approach for early years*.

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Green literacy | Persuasive writing

Plastic—we're swimming in it!

Julie Williams

At Springfield Junior School, we aim to deliver a broad and balanced creative curriculum; that teaches key skills in a way that is relevant to our children. The literacy skill I was aiming to deliver in the Spring Term was persuasive letter writing. So, during morning literacy lessons, I taught the key features of persuasive writing and during topic lessons the focus was the ocean environment. As a school, we use the Cornerstones Curriculum programme and it was from this I was to take this term's theme – 'The Blue Abyss'.

Springfield Junior School sits in South Derbyshire, which couldn't be further away from any sea or ocean. Also, making persuasive letter writing relevant in a world of email and social media was going to be a challenge. Then over the horizon sailed the BBC television series *Blue Planet 2*.



Classroom display using recycled rubbish, to get the message across.
Image: Amy Norton

Who amongst us wasn't moved by the series and particularly the programme that focused on the dumping of plastic in our oceans? I felt it was so important to make my nine-year-olds aware of the situation, as many hadn't seen the programme and because change has to start somewhere.

To deliver the key writing skills of persuasive writing, I introduced the argument (through a letter to the headteacher), that teachers should be allowed to eat chocolate as they teach; highlighting the benefits this would bring to the learning environment in the classroom. Once the children realised that they weren't to get a share of the chocolate, a lively debate ensued. On large sheets of paper, I recorded key phrases that we might use. The children were then tasked (working in mixed ability groups) with arguing against the proposal using the original letter to scaffold their reply.

During the afternoons, the class learnt the names of the oceans and where they could be found across the globe.

Environmentally, my starting point was to show the children Justin Hofman's photograph of a sea horse with a Q-tip (tinyurl.com/yc9fgnh7). We started to discuss what we could see. At first the children focused on the cuteness of the seahorse but then they began to look more closely at the Q-tip and what it might have been used for before it ended up in the sea – removing ear wax led to a chorus of 'yucks!'

I showed the children the episode from *Blue Planet 2* that focused on the damage plastics are doing in the oceans. The children were very irate and I asked them to share their feelings, which my teaching assistant recorded on large sheets of paper. That evening, the children were asked to keep a record of the different types of plastic they encountered.

But what had pollution in a distant ocean got to do with them? Drawing the link between land-locked Derbyshire and some far-flung ocean was key.

Out in the playground, the children were given fifteen minutes to collect as much rubbish as they could – there were ten team points for the group that found the most. I find competition encourages the group effort.

There was a surprising amount of rubbish on the edges of the school grounds. Lots of wrappers, plastic straws and the plastic lids that come with takeaway coffee. As

the school isn't that near to any takeaway outlets, we discussed how the coffee lids could have got there. One suggestion was that parents, when dropping off and collecting their children, had left them and of course the next suggestion was that the wind had carried them into our school playground. The link was made. The children realised that any plastic that is thrown to the ground can be carried far and wide by the wind, into rivers and streams and then taken out to sea.

Back in the classroom, the children decided that they wanted to write to companies that they felt might have influence. They decided to write to the Prime Minister and the CEOs of the largest supermarkets. They came up with the idea that supermarket cafés could charge 5p for plastic straws. Well, this had worked for plastic carrier bags. We began to plan our letters.

The children decided on the fronted adverbials they were going to use to start their paragraphs. These were taken from the work we had already completed in our literacy sessions. Letters had to be slightly different depending on who the letter was being sent to. Paragraphs were written onto strips of paper which allowed the children to move paragraphs about to achieve the greatest impact.

Spellings were checked and the children read out their letters to their classmates, who offered constructive criticism. The letters were written out in the children's very best handwriting on specially bought paper. We posted the letters and eagerly awaited the replies.

As well as the letters, the children wanted to get the message about plastics in the oceans out to their classmates, so posters were created. This was another chance to learn about a different form of persuasive writing with the children coming up with slogans and using emotive language to get their message across.

I was so proud of the work the children produced and the amount of effort they gave to each task. Each reply we received was greeted with great excitement, especially those bearing the embossed address '10 Downing Street'.

Reading this, some may think that this work captured the zeitgeist of the moment and that the work won't be relevant to their classroom. To a certain extent this is true. But sadly there are many other environmental issues that could be used as a starting point for persuasive writing – the plight of bees; loss of woodlands; loss of habitat due to development; and many more. Children are very sympathetic and care deeply about the environment and as teachers we should be harnessing their energy. 🌍



A great poster by Harry. Image: Amy Norton

.....
Julie Williams has been a primary teacher for over twenty years. She has taught across the key stages and at present is working at Springfield Junior School in Swadlincote, South Derbyshire. Julie is passionate about outdoor learning and connecting children with their environment; fostering a sense of responsibility for the world in which they live. She has a class of twenty-nine mixed-ability Year 4 children and the school takes the majority of its children from a large estate of social housing. Swadlincote is a former mining town with more than its fair share of social problems.

Springfield Junior School was built in 1936 and was designed by George Widdows, a pioneer of school building design whose aim was to enhance the health of school children.

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Green literacy | Green stories competition

Creating a cultural body of work that presents positive visions of sustainable societies, more than anything else, has the potential to enable a shift towards more sustainable society. The necessary societal transformations to sustainable societies require profound systemic changes across social, cultural, economic, environmental, political and technological domains. But to imagine how all aspects can come together within one society is more the domain of creative fiction.

This conviction led Dr Denise Baden from Southampton Business School and Carole Burns, Head of Creative Writing, University of Southampton, to run a free writing competition to solicit short stories set within a sustainable society. The standard of entries was fantastic and

there will be a prize-giving event on 21st June at October Books, Southampton, to celebrate the winners. Author Philip Hoare will present the prizes and we will read out extracts from the winning entries and runners up.

The resulting anthology of short stories *Light Green, Dark Green* is due to be published early 2019 by Retreat West Publishers with a foreword by Chris Packham. Royalties will be put towards prizes for a series of competitions on a larger scale next year, with more formats (film, screenplays, radio plays, stage plays, TV series, novels etc.) and larger prizes and media involvement. 🌍

greenstories.org.uk; twitter.com/GreenstoriesUK;
facebook.com/greenstoriesoton

Young people in conservation: where are the next gen naturalists?

Louis Driver

With technology being an increasingly large part of our lives, young people are becoming more and more disconnected from nature. Nature isn't appreciated by young people, so consumed by social media that they no longer stop to take in the world around them.

Speaking to friends at school, I have realized that many do care for wildlife and the environment. Many have said that they want to help nature, but don't know how. One person told me that they would *"love to help the environment but wouldn't be too sure how to"*. Another told me how they *"would never aim for a career in nature"*, with others saying they enjoy being in nature and helping the environment, but aren't so interested in taking up wildlife as a hobby.

So what can be done? Many young people I know enjoy doing small things that help nature and the environment. During the cold weather at the start of March, I asked friends to clear a patch of snow in their garden and leave out some bird food. I had a massive positive response, with almost 20 people leaving out apples or other food! One person said that they *"think it's really important that people know that they can do easy things like putting out apple and bread outside for birds"*. This shows that when young people know what they can do for nature they can have a positive effect.

When I spoke to friends, I asked if they would be interested in a monthly wildlife group. Many were interested, saying that they would give it a go – but were unsure if they would make the commitment of attending regularly. One said, *"I'd be interested in trying. Going consistently? I'm not sure"*.

I also spoke to some of the UK's budding young naturalists about what started their interest in nature. For most of us, we have always loved nature. From a young age, we have been encouraged to explore the world outside and have seen the amazing things that nature holds. It is these fascinating experiences with the natural world – seeing a blue tit nest go from a small clutch of eggs to a cluster of large chicks, going pond dipping at a local nature reserve or watching beautiful red squirrels scampering around a forest floor – that spark life long interests in wildlife. Connection with nature from a young age inspires children to help the environment for a lifetime.

This next generation of naturalists is more important than ever, with the technological age leaving the world's ecosystems dying. However is it actually the technology that takes away our connection with nature? If children are no longer encouraged to explore the natural world, interest and passion for wildlife will be snubbed out. If young people no longer have inspiring experiences with nature, where will the next generation of conservationists come from? 🌿



Louis holding an Alder Moth. Image: Ben Porter
(benporterwildlife.co.uk)

Louis Driver is a 14-year-old wildlife lover, trainee bird ringer, nest recorder, keen birdwatcher and blogger.

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Practical activities such as bird ringing are great for engaging teenagers. Image: Ben Porter (benporterwildlife.co.uk)

Academic researcher Denise Baden, of the University of Southampton, is looking for participants to take part in a study regarding responses to environmental messages in stories.

This would involve reading 4 very short stories (about 400 words each) and then writing about how they made you feel. It will take 15-20 minutes to complete the survey, and participants receive a £10 Amazon voucher. There will also be the opportunity to take part in a follow-up focus group at the University of Southampton in June.

More information: survey.soton.ac.uk/27880

Hugh Kenrick Days



Spring update

**Lucy Steventon, Caroline Starr
& Catherine Anderson**

Ladypool Primary School, Reception Kenrick Day visits to Martineau Gardens, 13th & 15th March 2018

During the Spring Term, Reception's topic 'Why are carrots orange?' focused on learning about growth and understanding the world. To give the children a real-life hands-on experience, we booked the 'Plant Professor' workshop at Martineau Gardens, which gave them an understanding of how plants grow and reproduce, as well as the anatomy of plants.

During the visit, the children got to explore the beautiful gardens and greenhouse. Part of the visit included looking at, smelling and tasting some of the fresh herbs and vegetables growing in the garden. Anees said: *"That was my favourite part. I ate them all and I only didn't like one."* The children really enjoyed tasting the different flavours.

We also got to explore the orchard and the children were challenged to try and discover what fruit the trees produced by blending sounds together to read the labels.

We learnt about the different parts of a plant and how bees and butterflies help with pollination. Khizer especially liked being the bee and was showing off his bee moves for days after the trip! The children really got a good understanding of the different parts of a flower, and this was reinforced with an engaging action song in the forest.



Acting out how bees pollinate flowers. Image: Lucy Steventon

In the forest, we got to explore lots of different leaves and the trees they come from. Arisa said it reminded her of the book *We're Going on a Bear Hunt* and sang the story out loud as we walked through. The children especially enjoyed the sensory activity of working with their blindfolded partner to meet a tree. They even managed to get some of the teachers involved.

Back at school, we used the experience to influence our independent writing – we wrote recounts, labelled plants and wrote instructions on how to plant a seed. We also used it to support our Science Week activity, which was all about growing. During this week, each child planted a bean and waited to see the roots start to grow, as they had learnt during our greenhouse session at Martineau Gardens that this was the first thing to happen when seeds germinate.



Finding some early signs of spring. Image: Lucy Steventon

The children got to explore a larger area of green space, not too far away from where they live. During the visit, they developed an understanding of how we need to take care of our environment. When another child was touching the daffodils, Alisha said: *"Be careful with them; you can't break them."*

The children and staff thoroughly enjoyed their trip and it inspired the children to start growing their own food at home, as they now have a deeper understanding of where food comes from.

Lucy Steventon is a teacher at Ladypool Primary School in Birmingham.

Environmental education at Martineau Gardens

I work closely with the teacher at Martineau Gardens to help deliver environmental education sessions to visiting schoolchildren. Hugh Kenrick Days are a brilliant way of enabling schools that wouldn't otherwise have the money to experience environmental education in a green oasis very close to the centre of Birmingham.

I have a long association with Martineau Gardens: I worked there as a gardener (between 1987 and 1991) and then the teaching assistant (from 1991 until Birmingham City Council withdrew its funding in 1997). Back then, it was called Martineau Environmental Studies Centre and we ran school visits just for Year 5 classes, offering them a choice of 57 different lesson plans!

My main roles were to take small groups around the gardens and to help look after the animals. I managed the poultry — several ex-battery hens, ducks, two quail and an arthritic turkey. I also helped with the goats and sheep (once being involved in delivering a breach lamb!); handled, cleaned and fed the indoor animals — a tortoise, grass snakes, bearded dragons, an axolotl, chinchillas, jerds (a large tunneling gerbil), giant millipedes, African land snails, three types of stick insect and several different species of bird.



Caroline in the orchard with a group of Year 3 pupils.
Image: Samantha Spencer (Erdington Hall Primary School)

After the Environmental Studies Centre closed, the former Head Gardener and I continued to maintain the gardens and worked to stop the land from being built on. With the help of Birmingham Friends of the Earth, we set up a petition, which gained hundreds of signatures including David Attenborough! We rehomed the animals to Birmingham Nature Centre, held a number of fundraising events and recruited about 30 volunteers.

I got involved again with Martineau Gardens in 2015, after attending an AGM. Once I heard that school groups were returning on a regular basis, I couldn't resist! My main role now is to lead tours of the Gardens, where the children are provided with the experience of tasting some of our home-grown produce. I am often elated by their responses when they taste something they wouldn't normally try — "You can eat more plants than I expected!" wrote one child on their evaluation form — and the vocabulary this draws out of them.

I believe that it is essential for children to know where their food comes from. Some of their misconceptions are really shocking: once when a child told me, "My mum grows peas on the balcony... in the freezer". I always try to encourage teachers to try growing food crops with the children back at school; when children grow their own food, they are always keen to eat it, and it is a great way of introducing them to vegetables.

Environmental education is so important. During their visits to places like Martineau Gardens, children are introduced to the wonder of nature, and how it keeps going whatever the weather. The continuing cycle of growth and change that makes sense to me seems magical to children. If we can encourage young people to look after the planet, hopefully some of the damage that we have inadvertently contributed to can be rectified before it's too late.

Caroline Starr leads tours of Martineau Gardens for schools and other groups.

Greet Primary School, Reception Kenrick Day visits to Mount Pleasant School Farm, March 2018

All four of our Reception classes visited Mount Pleasant Farm. The visit was planned to enhance the children's learning of a topic about farm animals. The main theme of the topic came from a book the children were learning for the 'Talk for Writing' process.

At the beginning of the topic, many of our children were unable to correctly name some common farm animals and they had little understanding about the similarities and differences between the farm animals.

Prior to the visit, we had the 'Living Eggs' experience in the classrooms, where the children watched eggs hatch and then looked after the new-born chicks. The farm visit further developed their understanding of the life cycle of a chicken, as they collected eggs that had been laid and even saw one egg as it was actually being laid! Children that were initially fearful of the big chickens became accustomed to the animals and enjoyed feeding them.

"The hen gives us egg and chicks come out of the egg. I like feeding the hens. They will grow and give us eggs."

Since the farm experience, children's talk about farm animals has increased. They also produced some brilliant written work after their visit.



Follow-up work back at school. Image: Catherine Anderson

Catherine Anderson is a Reception teacher at Greet Primary School in Birmingham. 🏡

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

UK | Pollinating insects

Polli:Nation Carley Sefton

Polli:Nation is a UK-wide, schools-based project funded by the Heritage Lottery Fund. Starting in 2016 we are now in the final year of the project which is helping hungry and homeless pollinating insects across the UK.

Pollinating insects are in trouble and children and young people from across the country have been finding out what they can do to help. It's a project anyone can get involved with and help make more homes for pollinating insects.

The first part of the project is surveying your patch; an area you have easy access to and that you can develop for the benefit of pollinating insects. It can be an area of grass, have shrubs or trees in it or you can just start with blank asphalt – as long as it has the potential for change. Everything needed to undertake the survey can be downloaded from polli-nation.co.uk.



Undertaking a Polli:Nation survey.
Image: Learning through Landscapes

The survey itself takes just a couple of minutes to complete and data can then be uploaded to the OPAL website to join the other national data being collected. You can see what we've found already on opalexplornature.org/dataexplorer.

Once you know what you have already got then you can plan to make your patch even better. This might be leaving grass to grow long, making a bug hotel or adding potted plants to your space. There are lots of ideas of what you can do on the project website.

The spring or summer after the changes have been made you can repeat your survey and upload the data again. This will be analysed so that we can see if we have more pollinating insects visiting our survey sites once changes have been made. The more sites we have, the more pollinating insects we can help.

One school on the project has been encouraging others to get involved by inviting people to make a 'pollinator promise'. Pupils at St Albans Church of England Primary School in Havant, Hampshire invite everyone to "promise to help pollinating insects by setting aside a 1 x 1 metre area in my garden or school grounds". If you don't have a patch of land, a window box will do instead. You can sign up at opalexplornature.org/polli-promise.



Discovering pollinating insects in the school's grounds.
Image: Learning through Landscapes

Polli:Nation not only aims to help pollinating insects but also to encourage the next generation of scientists and environmental activists. We have found that both teachers and pupils have learned a lot through the project and the fact that they can actually make a difference is key to the project's success.

As one teacher told us: *"I have a much greater understanding of the different types of pollinating insects and creating areas to attract these than I did at the beginning of the project. It has been as much a learning experience for me as it has been for the children."*

Polli:Nation is a partnership project with Learning through Landscapes leading the partnership. Butterfly Conservation, the Bumblebee Conservation Trust, Buglife, OPAL, FSC, TCV and the University of Stirling are all partners on the project, together with 260 schools across Northern Ireland, Wales, Scotland and England.



St Albans Primary pupils making changes to their own patch.
Image: Learning through Landscapes



Carley Sefton is CEO of the UK charity Learning Through Landscapes. The charity's vision is that every child benefits from stimulating outdoor learning and play in their education.

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Adventure under sail – inspiring young people Christie Laing

Ocean Youth Trust Scotland is a leading youth work development charity that delivers an annual programme of residential sail training voyages to encourage young people to discover their true potential through the experience of adventure under sail.

We believe that all young people, regardless of circumstance or ability, should have the opportunity to realise their true potential in order for them to live healthy, fulfilling lives, and to make a positive contribution to their community and society in general.

Whilst on board, the young people quite literally learn the ropes. They steer the boat, navigate, help to change the sails, keep a lookout, and help with all of the domestic tasks. Together, with the guidance of our highly skilled sea-staff, they explore the beautiful coastline of Scotland taking on the challenge of the sea and the elements.



Learning the ropes. Image: Ocean Youth Trust Scotland

An increased awareness of the environment around them is a key element of our voyages. Young people are encouraged to look around them, listen to weather forecasts and follow tidal information, and they are introduced to navigational charts to understand the layout of the land.

Watching porpoises swimming alongside, seeing gannets plunging into the water, or landing on an isolated island and being within touching distance of puffins, are all marvellous events for someone who has never experienced life outside of a built-up community. This introduction to the natural world aims to instil a new-found respect for the environment, and an awareness of how they can help make a real impact.



Alba Venturer. Image: Ocean Youth Trust Scotland

In order to link our outdoor learning work with the Scottish Curriculum for Excellence, we recently employed a teacher to map the Experiences and Outcomes and develop resources to support the delivery of these during our sail training voyages. Curriculum for Excellence promotes learning through real-life experiences and emphasises the benefits of interdisciplinary learning:

“Carefully planned interdisciplinary learning provides good opportunities to promote deeper understanding by applying knowledge and understanding and skills in new situations and taking on new challenges.”



Teaching on board. Image: Ocean Youth Trust Scotland

Voyages on board Ocean Youth Trust Scotland's fleet of vessels contribute to the outcomes across the entire curriculum and provide young people with a genuine and challenging learning environment. Resources have been produced to support learning across all areas of the curriculum, with lesson activities and resources that can be used both in school and on board the boats. Guidebooks support teachers in all aspects of booking and planning voyages, and there are log books which record the learning that takes place during voyages.

A set of videos covering all curriculum areas have been produced. These are designed to inspire teachers and show how the objectives of the curriculum can be delivered on board our boats.

As a result of this project, Ocean Youth Trust Scotland now has a structured approach to offering young people a cross curricular learning experience that contributes to their overall educational achievement, and in turn, makes sail training a more accessible option for teachers in supporting them to deliver the curriculum.

The project has delivered excellent outcomes so far. One young person, R, sailed with us as part of her school group. She said about her experience;

“I am in 5th year at school. I'd say it's okay but sometimes it's a struggle. I found 4th year hard and I'd say my confidence isn't that good. I don't know what I want to do when I leave... Since coming back [from the voyage] I'd say my concentration in class has improved and my guidance teacher thinks my work is getting better. I also feel more settled in school than I did before. This change in my attitude is definitely down to the OYT Scotland experience.”

R's mother and school guidance teacher have also noticed positive changes since R returned from her time sailing with Ocean Youth Trust Scotland.


"Since she's been back we have seen a big difference in her. The biggest change is in her attitude and her confidence." Mother

"I think she is in a much better place and stronger within herself to move on to college or employment and OYT Scotland has given her that wow moment that she will remember as she gets older and has made a positive contribution to where she is now."

Guidance Teacher



Hoisting the sail. Image: Ocean Youth Trust Scotland

Whilst this work has greatly improved what Ocean Youth Trust Scotland is able to offer schools, it is not the end. It has already led to the development of a specific programme for students who are struggling to remain engaged with school in their final years and in 2018, Ocean Youth Trust Scotland will launch its 'Transition' programme. This programme will be focused on helping schools to work with those students that particularly struggle with making the adjustment from primary to secondary education. 

Reference

¹ Education Scotland – Curriculum for Excellence Inter-disciplinary Learning

Christie Laing is Fundraising and Communications Officer at Ocean Youth Trust Scotland.

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UK | Higher Education

Life cycle of a zoology student

Francesca Marshall-Stochmal

Throughout my life, I have held a fascination for animals, wildlife and the great outdoors; therefore I opted to pursue my passion as my degree and subsequent career path. A degree in Zoology is everything I hoped it would be, and so much more. I completed my undergraduate BSc Zoology degree at Swansea University and was absolutely ecstatic to graduate with First Class Honours.



Francesca experiencing the UK's natural flora and fauna up close during a residential fieldtrip at Margam Country Park.

During my years at Swansea, I had the opportunity to study modules on a broad range of Bioscience subjects from 'Mammalian Carnivore Conservation and Ecology', to 'Entomology', plus 'Physics for Biologists' and 'Collective Animal Behaviour'. I feel that the diversity of these modules available gave me a well-rounded under-

standing of our biological systems, the species within them and the conservation techniques needed to protect them. Fieldtrips and laboratory experiments played an important role in the learning programme for my course; an aspect I found extremely helpful as a practical learner myself.

The course included two week-long fieldtrips, one of which was a residential stay at Margam Country Park, and the other to various sites around Swansea University's campus, including the Brecon Beacons and the Gower. International fieldtrips were available to selected students in locations including Sikkim (India) and Puerto Rico. Activities on these fieldtrips included: phase 1 habitat surveys; river habitat surveys; bat surveys; and identifying ecosystems services. Various skills were practised, learnt and developed on these fieldtrips, allowing students to really understand some of the skills required of a field and research scientist, and how the studies used in determining conservation efforts are conducted. Abby Thomas, current 3rd year Zoology student said:

"I personally found the field courses that I was lucky enough to undertake during my course allowed me to secure a year in industry placement as a research assistant in Limpopo, South Africa. Here, I was able to apply my skills through undertaking my own research; all the while developing and discovering my future research aspirations".

The taught modules, along with our fieldtrips, provided us with the necessary skills to conduct independent research for a 'Biological Science Literature Review', as well as our dissertations.

I really wanted to make the most of my final year project, therefore I actively sought the opportunity to conduct my research on human-wildlife conflict, a field I aspired to

work in and am currently pursuing in my further education. After hearing my ideas, my dissertation supervisor, Dr Cynthia Froyd, put me in contact with Dr Stephan Woodborne who knew a researcher in Botswana investigating the perception of locals living alongside large carnivores. I travelled to Botswana in July 2016 for a month to assist Christiaan Winterbach, whose expertise is with large carnivores, and his team, Rob Thomson and Gail Potgieter, with their research. We conducted transect track surveys to determine the density of the focal species in the study site in western Ngamiland, Botswana, located west of the Okavango Delta, along the border of Namibia. We completed interviews at two rural villages, Xai Xai and Kareng, in order to understand the perceptions of the locals coexisting alongside large carnivores such as leopards, wild dogs, and black-backed jackals.



Francesca with the children of a local family in the rural village Xai Xai, in western Ngamiland Botswana.

The whole experience was truly life-changing, as I was able to witness first-hand the struggles the locals face with these species, including threats to their own lives and livestock depredation, which would greatly affect their household income. The growth in human population has resulted in the inhabitation of new landscapes, increasing our contact with wild species. We need to understand these species' ecology, behaviour and distribution in order to protect them, while also considering the opinions of the locals, as their support for conservation programmes is vital for their success.

Since graduating around 6 months ago, my degree has allowed me to gain new and exciting experiences within the science and conservation world. Currently I am a research assistant for Dr Andrew King's SHOAL Group at Swansea University, where I am assisting on projects associated with human-baboon conflict in Cape Town, South Africa, and animal behaviour in agricultural farming. I have gained invaluable experience, from designing and building radio collar tracking devices, to documenting the protocol for an open access publication.

Alongside my work at SHOAL, I am a learning volunteer at ZSL's London Zoo. Environmental education is a great passion of mine, and I enjoy the platform this role gives me, engaging with the public of all ages, discussing wildlife and conservation, and inspiring others to become involved in helping to make a difference.



Elephant observed on dissertation field trip in the Okavango Delta, Botswana. Image: Francesca Marshall-Stochmal

University is unlike anything you may have experienced before; there are opportunities for everyone and many new experiences to be had. I personally also enjoyed spending my time outside academia, playing for my university's hockey team and being a member of our Conservation and Ecological Society. I believe it is important to have a healthy balance in all aspects of life, especially with your time. A biological science degree not only provides considerable inter-transferrable skills, in communication, analysis and team work, but also gives the student a unique experience that will leave them with a better understanding of the world in which we live, and the roles we play. I have been particularly inspired by my course, and have subsequently gained a great sense of fulfilment through my experiences, knowing that the projects I am working on are benefiting humans, wildlife, and our environment. As a result, I am thoroughly excited to continue making a difference through my Masters studies. A Zoology course requires a lot of hard work and commitment, plus it is also important to be proactive about seeking work experience opportunities. Conservation can start at home, and that is exactly where I started my first volunteering role, at my local Wildlife Trust. My advice for future students would be to immerse themselves in new experiences, say yes to new opportunities, and be passionate about everything they do. 🌿

UK | Research

What trends in environmental education?

Professor William Scott

At the end of March, the NAEF blog¹ had a post about the differences between Earth Education and Environmental Education (as seen from the point of view of the Institute for Earth Education, IEE)². This is summarised in the two boxes on the next page.

The blog asked readers what they thought. This is my personal response.

The first thing to note is that the comparison comes at the end of a section on the IEE website with the title: *What Happened to 'Environmental Education'?* The opening lines are:

"Frankly, we gave up on that term. Here are some

excerpts from 'Environmental Education: Mission Gone Astray', a speech Steve Van Matre presented at numerous conferences over the years to encourage leaders in our field to rethink their view about this urgent educational work."

I recommend you read this, as there are some uncomfortable issues set out that we environmental educators ought to confront. There's also much that we might disagree with, but that's for another day.

Environmental Education (Tendencies)

- supplemental and random
- classroom based
- issues oriented
- focuses mainly on developing secondary concepts and conducting environmental studies and projects
- activity based
- claims to teach how to think, not what to think
- relies heavily upon conducting group discussions to achieve its instructional objectives
- integrates the inputs (messages) and consolidates the applications (projects)
- infused with 'cornucopian' management messages and views
- accepts a wide range of definitions and intentions

Earth Education (Aims)

- supplemental and random
- integral and programmatic
- natural world based
- lifestyle oriented
- focuses largely on developing 'ecological feeling' based on a combination of mental and physical engagement with the natural world
- outcome based
- claims to instil values and change habits
- relies heavily upon conducting participatory educational adventures to achieve its instructional objectives
- consolidates the inputs (messages) and integrates the applications (projects)
- infused with the original ideals of deep ecology
- rejects becoming everything to everyone

I'm interested for the moment in how environmental education is portrayed in this chart. Although the article recognises *"that there are exceptions to these characteristics on both sides of the chart"*, it adds, *"However, in general, we think you will find they represent accurate descriptions of the two movements."*

Well, only up to a point. My view is that earth education is one part of a wide-ranging environmental education movement. In 2003, Steve Gough and I wrote this³:
"... what a broad church environmental education is – a church whose congregation and ministers represent many facets of what we might call environmental

learning. This we define purposefully broadly as 'learning which accrues, or is derived, from an engagement with the environment or with environmental ideas'. Such learning can be the outcome from formal or non-formal educational programmes in schools, and/or communities, from designated environmental education interventions, or from personal or incidental learning where no teacher or instructor was involved."

The text that followed this set out nine categories of interest which, we said, captured, in a tentative fashion, a range of foci and objectives of those who espouse and promote environmental learning. Although we might have mentioned earth education, as it fits into this categorisation, oddly, perhaps, we didn't.

In the light of this, what can we make of the environmental education tendencies that are set out in the IEE chart?

First, is it really obviously the case that environmental education tends to be classroom-based, issues-oriented, activity-based or project-focused, or that it relies on group discussions? Well, it all really depends on what you mean by "tend". However, these are all pedagogically useful strategies to help learners learn, and they are not the only strategies available.

Secondly, given how much open-ended consideration of environmental (and sustainability) issues goes on, is it really obviously the case that environmental education tends to be infused with cornucopian management messages and views? This proposition sits oddly with the tendency (generalisation warning) for environmental educators to be at the *socially-progressive* end of the political spectrum. It would, of course, be strange if such ideas did not feature within argumentation.

That said, there might well be something of a tendency within (the broad church of) environmental education to teach students how to think about issues (rather than to teach them what to think), but surely this is only a problem if you know you have the right answers which you desperately need others to learn (all churches contain such people, of course). And environmental education probably does work with a wide range of definitions and intentions simply because it is a broad church⁴.

All this illustrates the problem with writing columns of *tendencies* as these tend to be over-simplifications and might even, heaven forbid, succumb to the sin of tentatiousness. 🌈

1. naee.org.uk/earth-education-environmental-education
2. ieetree.org/earth-education/#anchor-0
3. Scott WAH & Gough SR (2003) *Categorizing Environmental Learning*; NAAEE Communicator 33.1
4. As for its being supplemental and random, or that it focuses mainly on developing secondary concepts, I'd be better able to comment if I knew what all this meant.

Professor William Scott is NAAEE's Chair of Trustees. He is a recently retired Professor of Education at the University of Bath, where he was head of its Education and Sustainability research programme, Director of the Centre for Research in Education and the Environment, and a Deputy-director of the University's Institute for Sustainable Energy and the Environment.

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The legacy of Aunt Maple

Stephen Cooper

At the start of recess, Hafsa and Anna don their safety goggles and work gloves. A board rests on two saw horses near a wooded path next to the school's athletic pitch where younger students have arrived to play tag. Hafsa stabilizes the plank as Anna guides her handsaw into a chalk line at the far end. The pair works together to cut a series of precise board lengths. Two boys approach. Bryce carries a load of lumber and Hugh delivers a bucket of tools. Anna chuckles, *"Just a regular day at school."*



'Aunt Maple' in the fall. Image: Stephen Cooper

These students are working outside as part of an environmental education lesson as well as in an effort to save a dear friend and iconic landmark of their school. 'Aunt Maple' is the endearing name given to a maple tree that rests at the epicenter of the children's school grounds, the North Hills Campus at Winchester Thurston (WTN), an independent lower elementary school north of the city of Pittsburgh, Pennsylvania. WTN educates ninety students aged five to eleven. Aunt Maple has become a familiar family member who watches over us. She is a dependable figure who is always there regardless of the time of year. Aunt Maple is a recognizable feature and favorite gathering point for our school. Like a beloved guardian, her protective crown extends over the property, offering shaded shelter and inspiring the children to engage in their outdoor environment.



Exploring our natural world. Image: Stephen Cooper

Each year, as they prepare to leave the campus for the journey to Middle School, the students plan and construct a class Legacy Project that remains on site as a lasting tribute to their time at our school. They have chosen to honor their beloved Aunt Maple as well as provide for her lasting legacy.

Close to one hundred and twenty years of age, Aunt Maple has recently shown signs of decline. Excessive foot travel around her trunk has compacted the soil, affecting her root base. The elder class members of WTN decided to focus their Legacy Project as a means to rescue their dear family member. They designed a wraparound bench that would protect her trunk as well as provide an outdoor classroom to honor her role in the community.



The Fifth Graders' legacy bench. Image: Stephen Cooper

More than just a service project, these students are also building on their academics. Each Legacy Project incorporates cross-curricular connections that draw in science, language arts, math, literacy, art, technology, and physical education. The science teacher introduced the benefits that Aunt Maple provides for our community, addressed the impact that we have on her environment, and discussed a means toward greater sustainability. Utilizing a series of mathematic formulas that included trunk circumference, the Academic Enrichment Classroom determined that Aunt Maple has been a presence on our campus since the 1890s. In language arts, the students shared their favorite memories of playing and learning outside. One student said:

"We also made up fairy tales about how Aunt Maple comes alive at night and walks around the school. I wrote that she likes to kick the soccer balls around the field and swim in the pond when no one is around."

The specialist classes also participated in the initiative. The dance and music teachers conducted classes under her branches as they mimicked the movements of falling leaves and generated the sound of wind blowing over branches. Construction basics and safety procedures were introduced during physical education. Decorative tiles to adorn the bench were crafted in art. The students recorded the project by using digital cameras to produce a documentary as part of their technology class.

Other Legacy Projects have included decorative sculptures for our gardens and unique trailhead features for

our interpretive nature trail, including a map kiosk display and a sheltered entranceway made out of tree branches. One recent graduating group compiled a digital guidebook of the plants on campus that can be accessed through QR Codes. A favorite outdoor classroom was converted into a Pioneer Village hosting a fire pit, log benches, trading tables, and an actual life size log cabin that can be reassembled each year.



A past Legacy Project. Image: Stephen Cooper



Students construct a log cabin as part of their Social Studies Unit on Pioneer Living. Image: Stephen Cooper

At the WT North Hills Campus, we utilize curricular connections with outdoor learning, to establish a culture that is sustainable and vibrant so that our students can gain a better understanding of our environment. Through purposeful instruction, we help our classes become invested in their wild spaces which leads to greater caring for their future and then to active participation through advocacy and leadership. We are attempting to accomplish this by integrating academics with outdoor classrooms to provide deeper learning experiences that incorporate related environmental components.

"The children were devastated at the thought of losing dear Aunt Maple. They became so invested with saving her, that they didn't recognize how hard they had been working on their academics as well."

(Comment from a teacher)



Pointing our students toward more learning opportunities.
Image: Stephen Cooper

"We had just finished cutting the lumber when our PE teacher told us that it was the end of the class and time to go home," Fifth Grader Hafsa said. "I was having so much fun, I completely forgot I was at school."

Reaching beyond a rigorous curriculum, we are also preparing our children to be leaders in the 21st Century. Leaders who will be advocates for sustainability as well as active global citizens. Laurie Vennes, Director of WTN, said:

"Students who spend more time learning in nature demonstrate a greater awareness of the issues that confront their communities. We are providing them with the opportunity to make a profound impact on their environment. To evoke change in a cause that they are passionate about. Show them that they can make a difference."

Such nature-based experiential opportunities inspire genuine perspectives that will forge the mindset for future leaders. These natural connections are the teachable moments that saved our beloved Aunt Maple. At the dedication ceremony for the Legacy Project, fellow Fifth Grader Anna told the school, *"We hope that our legacy lasts as long as Aunt Maple's has lasted."* 🌳



Reading under the branches of Aunt Maple. Image: Stephen Cooper

Stephen Cooper is Outdoor Education Coordinator, School Nurse and a member of staff in the PE Department at RN North Hills Campus.

Contact: wtcoopers.wordpress.com

Environmental education in Aotearoa

David Fellows

Background

Almost twenty years ago, I came out to New Zealand as part of a group of 22 teachers who had been offered a year's exchange teaching on the other side of the globe through LECT, the League of Exchange for Commonwealth Teachers. Sadly it no longer exists. My wife and I were very fortunate to be placed in the far north of the country at the top end of Northland, an area rich in history and natural beauty but with significant social problems. My exchange partner was equally pleased to be teaching close to all the environmental treasures of Cumbria.

As part of the exchange we were to complete a study on aspects of education in our respective countries. I didn't study environmental education (EE) as such, but chose to study every educational 'issue' that appeared in the local and national press, as they reflected concerns of the day. There were plenty, especially as it was an election year that was to bring in a change of government. My conclusion at the end of twelve months was that every 'crackpot' idea that seemed to have been born in America and made it through two of the Australian states was now on the shores of New Zealand.

Thanks to a fortunate set of circumstances, my wife and I have been able to visit New Zealand most years since then and are closely involved in the local community. Our house is close to three of the local primary schools and we have been able to attend most of the major bi-annual national NZAEE conferences which also attracted a large number of international speakers, keen to view many of New Zealand's environmental attractions.

An overview



Growing food at Onerahi Primary School, Whangarei, New Zealand.
Image: David Fellows

Education doesn't feature so highly in the news at the moment, apart from there being a general shortage of teachers, especially in Auckland, the country's fastest growing city. Accommodation prices there are at an all time high, far too high for many teachers and, unlike London, there is no extra allowance. Dominant are concerns over the widening social divide between wealth and poverty, the housing shortage, the overworked and underpaid health service, an increasing prison

population and growing levels of obesity, especially among children. Several of these factors have a direct effect on pupils and their schools.

On the environment, New Zealanders, are increasingly aware that their clean, green image is being tarnished in several ways, including overfishing in coastal waters and the growing impact of dairy farming, precipitated by the greatly increased exports of dairy products to China. This in turn has increased the demand for irrigation in the South Island and the poorer flows and quality of fresh water. The rapidly growing population of Auckland has led to fewer waterways being fit to swim in and more water nationally being chlorinated. The relatively recent major earthquakes in Christchurch and then further north at Kaikōura, which also shook several buildings in Wellington, put a strain on finances and reconstruction resources. The ever increasing numbers of cars on the roads has led to more regular traffic jams, a higher number of deaths and greater urban air pollution in the bigger towns and cities.

As in the UK, national policies have played a big part in how teachers have viewed environmental education, from it being a core stimulus or simply something desirable, that there was not sufficient time. Just as with the National Curriculum in the UK having increasingly demanded greater teaching time, so too have the increasing pressures on teacher reporting and analysis of results in the National Standards altered the status and amounts of time given to EE. As you will see below, it doesn't always have to be so. It's been my good fortune to have tracked two outstanding primary schools in my local residential area over many years. They both deserve their title of 'Beacons of Success'.

Whangarei Heads School

This was my school for a year. Its situation was environmental perfection, nestling under the steep rocky outcrop of Mount Manaia, which is now part of the sports curriculum for year six pupils who race up to the top and back in an exceedingly fast time. The school, like, at one time, most of New Zealand's schools, still has its own outdoor swimming pool in use for four or five months a year. Sadly, costs have forced a significant percentage of schools to close their pools. It also has extensive grounds, for New Zealand has a landmass similar to the UK's but with less than a tenth of our population. There is a large playing field, a hard surface area, a nature trail through native woodland, allotment beds, and a chuck (chicken) house. Just beyond is the school library which doubles as the local area one too. It was recycled from a redundant church a few kilometres away.

Of a non-nature focus, there are close views out across the harbour entrance to New Zealand's only oil refinery and the extensive coast beyond. It makes a good opening for a topic on energy supplies versus environmental needs. Nearby for local visits and post school activities are a range of beaches, coastal coves, mangrove zones and Pacific breakers, a jetty for fishing and plenty of flat areas and pavements for scooters and skateboarding. Within a few weeks of teaching there, my class of 7-8 year olds were off on an overnight three-day camp at nearby Mackenzie Bay in the local hall for a full programme of EE experiences. Twenty years on and this tradition is still strong for each of the four junior years, with the eldest years having a winter visit to the volcanic

Mount Ruapehu, the North Island's highest peak, for skiing.

For several years after my wife and I retired from teaching in the UK, we were back helping out at the school. The range of activities had expanded in contrast to the increasing pressures back in the UK to 'teach to the tests'. I finally managed to persuade the key EE teacher to come along to a presentation at Onerahi School by the Enviroschools team, as the school deserved recognition for all its work. She had been reluctant because of the paperwork involved. It was worth it, for the following year pupils were confidently giving the Enviroschools judges a guided tour of the school's grounds. The outcome of this was the school being presented the top Green Gold Ambassador award, which they've continued to hold ever since. This was capped a few years ago by New Zealand's famous explorer and environmentalist, Sir Edmond Hillary, dropping in by helicopter.

Onerahi School

Back to Onerahi school close to our home, they too have gone from strength to strength and so have the pupil numbers, now around 530 in 22 classes. Fortunately, much of New Zealand still has far more space than in so much of the UK. The local paper had just done a front-page article on the school's continued helpful involvement with the nearby Dragonfly Springs, a new wetland area developed by a keen local resident. Although an appreciated local resource, some local residents had been regularly dumping their rubbish over the fence as a cheap and easy way to get rid of it.

Pupils and teachers working together soon restored the site and hope that their good example will be recognised. They're also regularly involved with another increasingly important nearby wildlife site, Matakohē-Limestone Island, where for years pupils have been tidying up and planting native trees, shrubs and flowers. The Island was established as reserve where Kiwi, the iconic flightless birds, could be reared until they are large enough to fight off many predators and be released with a formal Maori ceremonial blessing on relatively safe mainland sites. At the time of writing, numbers 149 -151 have just been released. Other species, including skink, weta and petrels are carefully protected on the island. It's an enjoyable few minutes' ferryboat ride experience that teaches so much about protecting our planet's diverse resources. My wife and I have certainly learnt so much from our monthly work days.



Onerahi School's beehive, viewed during a typical New Zealand short sharp shower. Image: David Fellows

Back within the school grounds, fenced areas now house a woodland walk, a chicken run, a bee hive and beds for growing fruit and vegetables. The school has also maintained its swimming pool, with classes receiving two lessons a week. The latest venture being developed is a shed full of over 30 cycles for regular use by the junior classes. Just outside the school grounds, our local council has restored and enlarged the very popular skateboard park. So many facilities help to ensure positive attitudes to living in and enjoying our environment.



Onerahi School's latest addition: bikes for their in-school track.
Image: David Fellows

Onerahi school may seem too enjoyable to be true but respects the National Standards guidelines with thorough planning of subject areas to ensure that all mesh together to provide a broad and rewarding education for its many and diverse pupils. Below is the outline contribution that environmental education aims to make.

Environmental education nationally

Enviroschools is now recognised as a key provider, usually in tandem with the local authorities. As with our own NAEE association, NZAEE finds it hard to recruit classroom teachers to its conferences and our own Northland regional organisation, like our Cumbria one, is little more than a meeting ground for now retired teachers. The current generation is too busy with teaching, planning and the increased testing regimes to enjoy sharing the positive. There are still many schools throughout the country where EE is deeply ingrained in the national psyche. I need more time and thus another article to give a fuller picture. Our new NZ government has only been in power a few months, but the future already looks promising. 🇳🇿

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David Fellows is a member of the NAEE Executive. He is a retired headteacher who now splits his time between Cumbria and New Zealand.

Observation of barn swallows with children Hiroko Okamoto

Why do we observe the barn swallow with school children?

The barn swallow is one of the most familiar migratory birds and has had a close association with people for a long time. Barn swallows can be seen almost all over the world, and almost everyone, including children, can identify our tiny neighbours. According to several survey records, barn swallows have been declining in some countries, including Japan. One of the likely reasons seems to be the change of land use and farming practices, with the use of pesticides reducing the number of flying insects; a main food source for swallows. Another potential reason could be that modern buildings provide fewer opportunities for this species to build their nests.



Barn swallows. Image: David Wu

The barn swallow is a good indicator of environmental quality because a countryside rich in insects for swallows is also a sign that the overall environment is in balance; so observations of swallows are like a quick health check in our neighbourhood. The barn swallow also provides good education opportunities for children as they are found in numerous locations, and so are a resource available to almost all schools; including those in a city centre, the suburbs, and in rural areas. Swallow nests are often close enough to be observed with the naked eye, meaning no special equipment is needed to observe them.

In Japan and several countries in East Asia, barn swallows often build their nests under the eaves of a house or inside a building facing the street. Collecting records of breeding swallows is a fun and educational activity for children, which is therefore not too difficult. The study requires the observer to walk through streets of the study area, checking every building, while recording the number of swallow nests on the survey form. After the field survey, return to the classroom and collate the number of swallow nests. Collectively, they share the information obtained during the survey, including the distribution of the nests and other observations about swallows, and then consider the surrounding environment and its relationship with the birds.

We can expect children to gain new skills from this experience, such as: conducting a survey and making comparisons, as well as analysing information and reaching conclusions based on their observations. Swallows are

an ideal educational resource for children and swallow observation can be linked to the school curriculum.

Swallow survey conducted by school children in Taiwan

Wild Bird Society of Japan (WBSJ) has had a swallow observation programme for schools since 2013. This programme is a joint project with Ecotourism Taiwan and primary schools in mid-Taiwan, Taichung.

Kuo Kuang Elementary School has been conducting a swallow observation programme since 2013, which includes recording the number of swallow nests and chicks, noting what the parents were doing, and interviewing local people about swallows. The participants have collected and analysed the data, as well as made posters or drawings to present their survey results. In Taichung, swallows usually arrive from February to the beginning of March. They build nests and start their first breeding in March, and second breeding in May. According to the survey, the total number of fledglings per year has not changed in these three years.

Mr David Wu, the teacher of Kuo Kuang Elementary School said:

"We watched barn swallows, the closest creature to people. We recorded their nesting, mating, hatching, breeding and training the chicks flying for independence. The process has fulfilled the teachers' as well as students' hearts of Kuo Kuang Elementary School. We also felt touched by the happy volunteers of Wild Bird Society of Japan who came afar to work with us. This helped to demonstrate to us the concept of conservation has no boundary and there is only one planet."




Swallow observation at Kuo Kuang Elementary School, Taichung, Taiwan. Image: David Wu



Swallow observation at Kuo Kuang Elementary School, Taichung, Taiwan. Image: David Wu

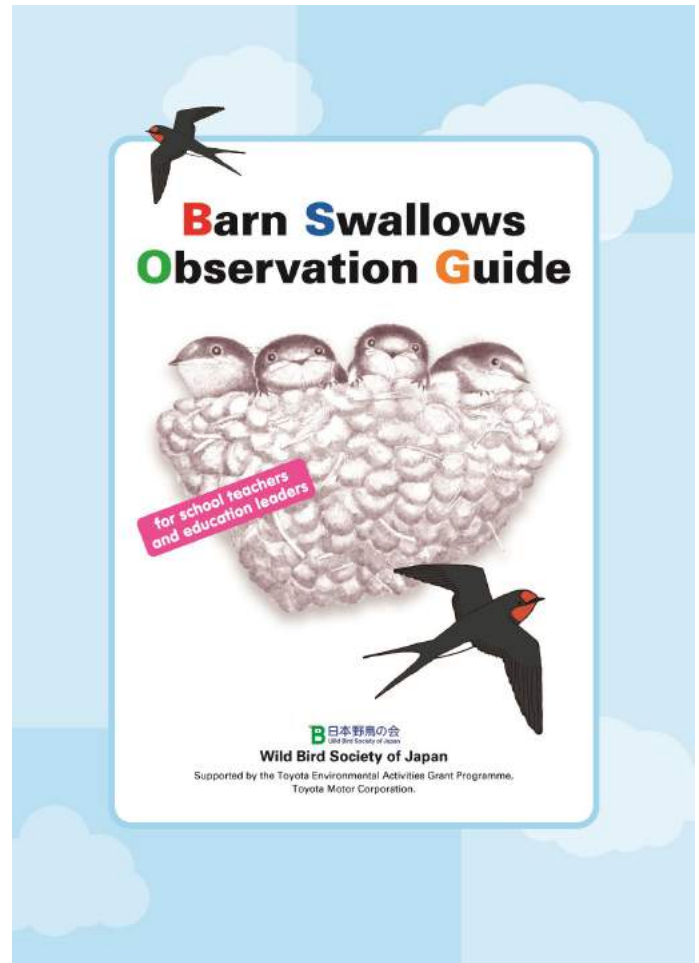
In Taiwan, many people welcome swallows but some people destroy the nests. Students of Kuo Kuang Elementary School have been trying to improve the relationship between local people and swallows through the survey. They aim to encourage swallow breeding, for example, by suggesting to locals how to prevent the floor from getting dirty from droppings. The school have also created a biotope in the school ground to provide food and nesting materials for swallows. Kuo Kuang Elementary School has become a Green School, to encourage children to connect with nature through school activities, including the swallow survey.

'Barn Swallows Observation Guide': free teaching kit for school teachers is now available

Based on the activity, WBSJ developed an e-teaching kit 'Barn Swallows Observation Guide for school teachers and education leaders' in 3 languages (English, Chinese and Japanese). This book suggests a swallow observation activity for primary school children and provides simple swallow survey methods to help young children learn how to observe nature in their environment. wbsj.org/activity/event/greenholiday/swallow-guidebook-en 

Wild Bird Society of Japan (WBSJ) is a conservation NGO and a BirdLife partner in Japan. WBSJ was established in 1934 for the purpose of conserving birds and their habitats to share the joy of nature with people. We secure a healthy environment for birds by managing nature reserves, conducting surveys on wild birds, promoting bird watching, and educating people to understand nature conservation.

Contact: hogo@wbsj.org



Write for *Environmental Education* journal

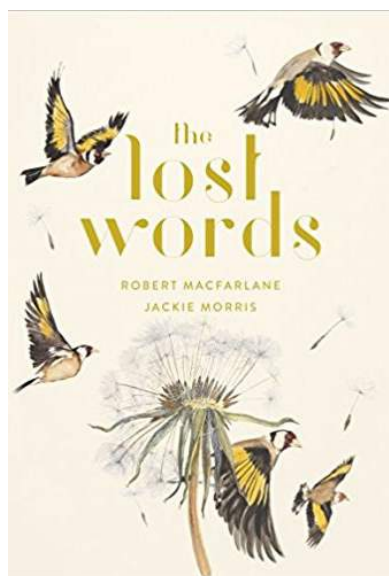
We welcome articles, book reviews and website suggestions from NAEE members, supporters and readers. We are especially interested in case studies, including environmental education, outdoor classrooms, forest schools, green literacy etc. — in primary or secondary schools and colleges. We are also interested in hearing from young writers who are interested in environmental issues, nature and conservation.

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

Advertising in the ejournal or paper journal is also available.

For more information, please contact henricus.p@yahoo.com or j.green@naee.org.uk.

The Lost Words **Robert Macfarlane & Jackie Morris**



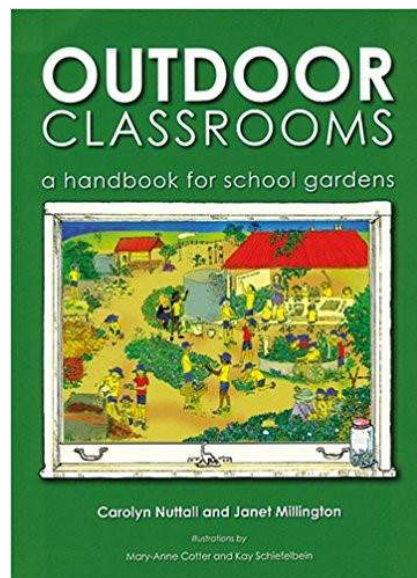
The Lost Words is a truly breathtaking book, absorbing for adults and children alike – I have lost track of the number of times I have walked into a room I thought was empty, only to find my 3 children (aged 6 to 9) poring and wondering over it together, taking turns to read poems and turn pages to reveal its beautiful artwork. The book's size is one of its draws – each page is almost the size of an A3 sheet of paper, which means that for groups of children, families, or in the classroom, it is perfect for sharing.

Macfarlane has penned poems about animals and plantlife which are vivid and descriptive, bringing to life the wildlife in question, but also educating the reader on the language that has been lost surrounding its history; for example, he unearths the etymology of the dandelion (dent-de-lion) as well as rattling off its folk names (Windblow, Evening glow, Milkwitch, Parachute) and suggesting with humour some new ones (Bane of Lawn Perfectionists). Included are poems and illustrations of acorns, the adder, bluebells, brambles, conkers, the kingfisher, the otter and the wren, among others.

Macfarlane's motivation and the reason behind the title of the book is his belief that these names and words are becoming lost in children's vocabulary, "*no longer vivid in children's voices, no longer alive in their stories*". The poems showcase a broad vocabulary, as well as being packed full of imagery, alliteration and other poetic features which make them perfect for use with children and young adults in teaching literature. With this book in hand a teacher could simultaneously enhance their students' knowledge of the environment, and their grasp of language – and have a captive audience!

***The Lost Words*. Robert Macfarlane & Jackie Morris (2017). Hamish Hamilton. Hardback, pp128. ISBN 978-0-241-25358-8. £20.00.**
penguin.co.uk/ladybird/books/293340/the-lost-words

Outdoor Classrooms: a Handbook for School Gardens **Carolyn Nuttall & Janet Millington**



Outdoor Classrooms is a book written out of a wealth of experience and addresses how to build a sustainable garden in a school environment. As a writing team they combine experience of permaculture design and management, teacher training, and an in-depth knowledge of the history of school gardens and their benefits — both for child welfare but also for teaching about sustainability in the wider environment.

It should be said that the authors write primarily with Australia in mind and informing their experiences, but they do include a chapter on temperate climates, using experience in Britain as its subject, and much of what they cover in the book would be universally applicable. Particularly useful is the chapter on 'Linking school gardens to curricula' – for any teacher seeking to promote the use of a garden in their school and demonstrate how a school garden can be a valuable learning resource, the advice and information contained here will be of great value.

The handbook also contains some excellent practical guidelines on how to manage a group of children outside, including setting out new boundaries and rules for expected behaviour and responsibilities, and how to assess, evaluate and report outdoor learning outcomes. The authors themselves describe the ideas contained within the handbook as 'often fanciful' but 'attainable on some level'; they have allowed themselves the luxury of imagining an ideal which, far from being ridiculous, is inspiring and exciting for anyone passionate about environmental education, yet is grounded in the reality of curriculums and health and safety obligations – a really useful resource!

***Outdoor Classrooms: a Handbook for School Gardens*. Carolyn Nuttall and Janet Millington (2013). Permanent Publications. Paperback, pp176. ISBN 978-1-85623-113-8. £16.95.**
amazon.co.uk/Outdoor-Classrooms-Handbook-School-Gardens/dp/1856231135

Philippa Riste

Webwatch

Henricus Peters & Juliet Robertson

In this edition, we celebrate websites that are about literature related to the environment, or being/becoming more 'literate' about the world, especially through the important areas of food and climate change that affect our very existence. The first four links are from Juliet Robertson's blog (creativestartlearning.co.uk/literacy-outdoors) mentioned in her article in this ejournal.

Green literacy

Learning through Landscapes

For many years, this national UK school grounds charity have produced lesson plans and ideas to help teach literacy outside to different age ranges from early years to early secondary. Most are free to download, but some require you to be a member.

ltl.org.uk/resources

Wildtime Learning

A free collection of resources, many very simple and doable in a range of subjects. Use the filter to find the literacy suggestions.

wildtimelearning.com

RSPB outdoor learning resources

RSPB provide free, downloadable literacy resources for KS2 and KS3.

rspb.org.uk/ourwork/teaching/resources/literacy

Twinkl online educational publishing

Recently, Twinkl have produced several outdoor plans and activities which include literacy outside, for many age ranges from early years to early secondary. Use the search engine to narrow down what you are looking for. (You do need to be a member to access these.)

twinkl.co.uk

Facebook groups

Join the 'Outdoor Literacy' and 'Curriculum Based Outdoor Learning Ideas' groups on Facebook to share ideas, ask others for advice or get inspiration for outdoor ideas that link to literacy in the National Curriculum and the Curriculum for Excellence. Members can share existing ideas or ask for advice on any topic they are struggling for inspiration with. [Many other similar groups exist for other areas of the curriculum or the curricula of other countries.]

'The best books about green living for children of all ages' (from *The Guardian* website)

This list of literature and non-fiction books is arranged by key stage, from Early Years to KS4.

tinyurl.com/y78qbhux

Green Reads—books to help save the planet

Another list of books (organised into under 5s, 5 and older, 7 and older, and 11 and older) to help children "understand and change the world around them".

lovereading4kids.co.uk/genre/pla/Green-Reads.html

First News

First News is a children's newspaper that presents current news stories in an age-appropriate, fact-based manner. It often includes environmental news and debates that can be used as stimuli for literacy work.

firstnews.co.uk

Eco Kids Planet

This is a subscription-based nature and science magazine for children ages 7-11.

ecokidsplanet.co.uk

National Geographic Kids

The new National Geographic Kids Primary Resources section contains "fun and exciting teaching ideas and pupil-focused resource sheets aligned with the National Curriculum and the Scottish Curriculum for Excellence... written in the tone of National Geographic Kids Magazine; where learning and education reflects the joy of exploration".

natgeokids.com/au/teacher-category/primary-resources

Wildlife Watch

The Wildlife Watch website has a range of educational resources. Children, families and schools can all become members of Wildlife Watch.

wildlifewatch.org.uk/educational-resources

Farming, food & soil

Country Trust

This year sees the Country Trust celebrate 40 years of helping children with limited opportunities to experience food, farming and the countryside. By the summer, they will have worked with a huge 500,000 children!

countrytrust.org.uk

The Countryside Classroom

The resources section of this website includes a huge range of resources about where our food comes from, including the humble potato; also, the best plants for a wildlife garden.

countrysideclassroom.org.uk

Soil Association

The UK's leading food and farming charity is focused on enabling and promoting healthier eating for children at school and nursery.

soilassociation.org

British Society of Soil Science

This site has great downloadable resources for teachers; also nice interactive videos for students of all ages.

soils.org.uk/young-soil-explorers

soil-net

A free introduction to all things soil-related.

soil-net.com

Worm science

Some great videos of worms in action.

wormscience.org

Climate & climate change

UK Met Office

The UK meteorological service's website has some excellent resources related to climate change.

metoffice.gov.uk/climatechange

Climate Change Schools

Here's how schools can research and take action on climate change.

climatechangeschools.org.uk

UK Youth Climate Coalition

The voice of United Kingdom climate conferences.
ukycc.org

United Nations Climate Change

The latest UN climate change news, including decisions from the recent Bonn Climate Change Conference .
unfccc.int

Birds

In the United States, 2018 has been designated as 'Year of the Bird'. Here are a few websites focusing on our feathered friends:

National Geographic

National Geographic magazine features birds in many articles.
nationalgeographic.com

The Audubon Society

This famous society is also promoting its benefits to all concerned.
audubon.org

Bird Therapy

Joe Harkness writes a blog on the benefits of birdwatching for mental health. He is also due to have a book published, with the foreword written by Chris Packham.
birdtherapy.blog

The best birdwatching websites

This page from Countryfile lists some of the best websites related to birdwatching. (Compiled in 2011 but all the websites are still current.)
countryfile.com/countryside/best-birdwatching-websites

Eco-design

Urban resilience & eco-design

"Cities face a growing range of adversities and challenges in the 21st century. From the effects of climate change to growing migrant populations to inadequate infrastructure to pandemics to cyber-attacks. Resilience is what helps cities adapt and transform in the face of these challenges, helping them to prepare for both the expected and the unexpected."

"100RC [100 Resilient Cities] defines urban resilience as 'the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience'."

"Building urban resilience requires looking at a city holistically: understanding the systems that make up the city and the interdependencies and risks they may face. By strengthening the underlying fabric of a city and better understanding the potential shocks and stresses it may face, a city can improve its development trajectory and the well-being of its citizens."

100resilientcities.org

Coral reefs

International Year of the Reef (IYOR)

2018 officially marks the third international Year of the Reef: a year-long campaign of events and activities, this time with more focus on social media via #IYOR and @IYOR.
iyor2018.org

Anniversaries in 2018

The Geographical Association — 125 years old

Founded by just 11 individuals in 1893, the GA (Geographical Association) membership swelled to 1000 by 1912 and to over 10,000 by 1992. Today, the GA includes primary and secondary teachers, trainee teachers, teacher educators, academics, geography undergraduates, infant, primary and secondary schools, colleges, universities, libraries, societies, museums and organisations with an interest in geography education.

Alan Kinder, its Chief Executive, states that the GA is special in that it has expertise in *"recognising and promoting high quality geography teaching and learning, including 'curriculum making'; identifying and assessing professional standards for geography teaching ; describing progression in, and assessment of, geographical knowledge and understanding"*.

As Danny Dorling (Halford Mackinder Professor of Geography at the University of Oxford) has pointed out, *"the great challenges of the 21st century are geographical in their formulation, analysis and consequence, and they transcend the physical/social divide"*. Geography enjoys a special role in educating young people about the nature of these challenges because the subject carries some of the intellectual keys to making sense of them.

Geography teaches respect for people and places, inspires and nourishes curiosity, and deepens understanding of our world. It encourages young people to become responsible global citizens and fosters a range of skills including numeracy, teamwork, critical thinking and problem-solving. Today's young people are the decision-makers of the future and they must be geographically-literate if they are to engage with contemporary challenges and anticipate those to come.
geography.org.uk

International Union for Conservation of Nature (IUCN) — 70 years old

IUCN is celebrating its 70th anniversary in 2018 and, with growing momentum to meet ambitious global goals, the wind toward sustainable development is finally at our backs. Species are going extinct at alarming rates. Climate change is threatening communities, economies and the ecosystems on which they depend.

No one government or organisation can correct humanity's course alone – IUCN's unique mix of government and NGO working hand-in-hand is vital to global efforts in awareness and practical action

With 70 years of experience, vision and impact, the world needs IUCN's diverse and powerful Union more than ever.

iucn.org/celebrating-70-years

Henricus Peters is a teacher in China and joint Editor of this ejournal. **Juliet Robertson** is an experienced environmental education consultant based in Scotland.

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