

Clean Slate

No 119 Spring 2021 £2.50

Diversity,
inclusion
and CAT

Climate change and racism –
exploring the connections

Gardening for people,
plate and planet

Coping with the
climate crisis

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Cover image: Buttercups by Blue Swan Photography / Shutterstock

Editor Catriona Toms.

Design Graham Preston (grahamjpreston@hotmail.com).

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EDITORIAL

Peter Tyldesley

Green shoots of hope

I hope you are keeping well in these challenging times. It's been an incredibly tough year for many of us, with the winter months being hardest of all.

But as I write, at the tail end of February, the sounds of birds beginning to sing a little more energetically and the green shoots pushing up through the soil tell us that spring is on its way.

Like many people, this year more than ever before I've appreciated the real joy that these moments in nature can bring, and I know from talking to CAT members and supporters that many of you have felt the same.

That's just one of the reasons we were so pleased to have the BBC return to CAT for this year's Winterwatch, bringing wildlife and wild spaces into people's living rooms at a time when we haven't been able to get out as much as we might like, inspiring a new appreciation in people across the UK.

For many of us, this is the vital first step towards caring about and protecting the natural world, before going on to develop a deeper understanding of the connections between wildlife, biodiversity, climate, and human health and wellbeing.

This understanding and the drive to support and implement solutions is more important than ever as we begin to emerge from the pandemic and push for an economic recovery that genuinely builds back better, investing in solutions that will build resilience and address the climate and biodiversity crisis.

Here at CAT, we've recently unveiled a new five-year strategy, outlining our unique role in this transition – you can read about this on page 4. Our plans include an ambitious new vision for our eco centre, expansion of our outreach activities, investment in our Graduate School and development of our work with policymakers. We're also determined to improve diversity and inclusion at CAT, which you can read more about from CAT Trustee Sally Carr on page 16.

Working together, we *can* realise CAT's vision of a sustainable future for all humanity as part of a thriving natural world. The huge network of people around the globe determined to push forward solutions to protect and restore nature and to take action on the climate emergency shows us that a better world is possible – just as those green shoots pushing through the soil tell us that spring is on its way.

Peter Tyldesley
Chief Executive Officer



xx Keep in touch Write to us: Centre for Alternative Technology, Machynlleth, SY20 9AZ



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New CAT strategy to help accelerate the shift to net zero

STRATEGIC PLAN 2020-2025



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redevelopment of the CAT eco centre, with a new and updated immersive visitor experience. A new sustainable skills hub will allow many more people to access the skills and knowledge to help create a zero carbon future, and we will continue to develop and invest in our innovative postgraduate courses.

Alongside this, we have plans to rapidly scale up our outreach work to deliver CAT's message and learning experiences to a much wider digital audience.

Our new Hub and Innovation Lab will work with councils, communities and organisations, helping build their capacity to implement solutions, create systemic change and increase resilience to climate change, and we'll work with partners across the UK to influence government policy in support of the transition to zero carbon.

Crucial to the success of these plans is investment in the organisation – building financial resilience, capacity and capability, including a proactive push to enhance diversity and inclusion at all levels within the organisation and amongst our audiences.

As a CAT member, you have a vital role to play: through your ongoing support of our work, which we simply could not exist without; through your participation in and sharing of our research, campaigns and events; and through your work in helping build the better future that we all know is possible.

You can read a short summary of our new strategy on the CAT website at cat.org.uk/strategy – if you'd like to know more or to get more involved then drop us a line at members@cat.org.uk

We have recently published a new five-year strategy, outlining the key areas CAT will be focusing on as we work towards our vision of a sustainable future for all humanity as part of a thriving natural world.

The world must reach net zero greenhouse gas emissions by mid-century if we are to avoid dangerous climate breakdown. The earlier this is achieved, the greater our chance of limiting global temperature rise to near 1.5°C. At the same time we need to adapt our infrastructure and ways of life to reduce the impacts of now unavoidable levels of climate change, and we must address the widespread destruction of ecosystems and biodiversity loss.

With nearly 50 years' experience in environmental solutions, CAT has a unique role to play. Our new strategy outlines the key ways in which we will use our collective knowledge, networks and resources to help fulfil CAT's mission to inspire, inform and enable humanity to respond to the climate and biodiversity emergency.

Over the next few years, CAT's work will focus on providing inspiration, training and education in positive solutions to accelerate the shift to net zero greenhouse gas emissions.

Our ambitious plans include a reimagining and





BBC Winterwatch comes to CAT



Iolo Williams presented the wildlife of CAT and Mid Wales to millions of people across the UK.

Scott Watby

In January we were joined once again by Iolo Williams and the BBC Winterwatch team for two fantastic weeks celebrating the wildlife of CAT and Mid Wales.

Following last year's Autumnwatch, the team returned to CAT to share the natural wonders of a Welsh winter with audiences across the UK.

Watched by over 2.6 million people on BBC2, the programme brought a much-needed dose of nature into lockdown living rooms across the UK.

Celebrating the familiar species on our doorsteps alongside more unusual wildlife, Iolo was joined on screen by Gillian Burke, Chris Packham and Megan McCubbin, broadcasting from live bases in Cornwall and the New Forest.

Highlights from CAT included features on small and often overlooked species that play a crucial role in ecosystems. A feature on drone flies, herald moths and tissue moths overwintering in our old quarry tunnels, with microscope cameras giving us an up-close view, provided a fascinating insight into the lives of these tiny creatures. Meanwhile a piece on the lichens of CAT and the surrounding area looked at their ecological importance and remarkable biology, and highlighted the diversity and abundance of species in north west Wales, thanks to clean air, moisture and the ancient woodlands of the Atlantic Rainforest.

A new otter holt being built at CAT to provide refuge for these charismatic creatures was also featured, and the final programme of the series revealed the surprising discovery of one of the UK's rarest mammals roosting in one of our buildings: a greater horseshoe bat. Iolo outlined that this find could be linked

to climate change, another sign of the ways that global heating is disrupting our natural world – you can read more about this on page 26.

Other features looked at wildlife elsewhere in the UNESCO Dyfi Biosphere, with red kites, white-fronted geese and live footage of starlings roosting under Aberystwyth pier, all helping to inspire a love of nature and show how people can step in and help nature back from the brink.

On arriving at CAT last year for Autumnwatch, Iolo said:

“There is such an abundance of wildlife in Mid Wales and it's great to see it flourishing at a site that was once an industrial slate quarry.

“But even where wildlife is thriving, we know that the effects of climate change are already having an effect on biodiversity in the UK. We need to take action now, as a nation, or some of our wildlife could be lost forever.”

In the past year many of us have appreciated the natural world more than ever before, and programmes like Winterwatch have really helped us to get to know the wildlife on our doorsteps – often a vital first step in beginning to care about and protect the environment.

If you missed watching Winterwatch live, you can catch up on BBC iPlayer and view clips and related blogs on the BBC website at bbc.co.uk/winterwatch

You can read more about the otter holt build on page 28, the greater horseshoe bat on page 26, and the lichens of CAT and the surrounding area in a guest blog from lichenologist Dr Joe Hope – available at cat.org.uk/winterwatch

Sharing tried & tested solutions

Over the past year, CAT's Zero Carbon Britain Hub team has been collaborating with Ashden climate charity to share 'Tried and tested solutions for a green recovery' with local authorities and community groups across the UK.

A series of webinars covering the themes of transport, retrofit, working with nature and local food has showcased real life projects that can be replicated and scaled up to support action on the climate and biodiversity emergency.

The feedback from these events has been fantastic, with participants enjoying the interactive and practical nature of the sessions.

We're continuing the series this year, with a webinar every two months, looking first at new builds and housing developments, then thinking more about transport, energy and other aspects of the transition needed at local level and how barriers can be overcome.

We're also trying something different with a webinar 'in conversation' – a discussion on how communities are organising for action at county scale, sharing experience between those at the forefront of this challenge.

You can watch past webinar recordings and see what's coming up at www.cat.org.uk/webinars

New nature experiences this summer



If you're itching to start planning your summer, CAT's new range of bookable days out is here to help. With dates starting in May and booking now available, these unique experiences offer you the chance to discover more about our amazing natural world.

A new 'Gardening for Nature' day takes visitors on a journey

to explore ways of helping nature in even the smallest of outdoor spaces. Top tips from CAT's expert gardeners will help you learn new techniques while you enjoy a day out in our beautiful gardens.

Our 'Nature Detectives' family day is perfect for nature-loving families, exploring everything from camera traps and bug hunts to tips and tricks to bring a variety of bird species into your garden.

Also available are moth nights and a 'Secret Life of Birds' experience day – with more events being added throughout the year.

CAT's Head of Eco Centre John Challen said:

"We hope that these new experience days will give nature lovers something special to look forward to – the chance to find out more about the wildlife of Mid Wales and discover new ways to help nature thrive, all while enjoying a memorable day out."

The experiences are designed with safety in mind and full refunds are available should legal restrictions prevent you from attending a booked experience.

Find out more by visiting cat.org.uk/days-out



CAT at Home

Have you taken part in any of our #CATatHome activities yet? Take a look at our website for a whole range of events, activities and resources to help everyone find inspiration and advice on solutions to the climate and biodiversity emergency.

From family activities like nestbox building and imagining a zero carbon future, to free webinars on gardens, buildings, energy and more, we have lots of resources to help you stay connected and inspired while we're all staying home.

Our winter webinar series covered a just transition to zero carbon, gardening for wildlife, coping with the stress of the climate crisis, and restoring wild flower meadows – take a look at our website to watch past webinars and find out what's coming up this spring.

We're also developing more online versions of our popular short courses, including a range of new Zero Carbon Britain themed days and an introduction to compost toilets – look out for more courses being added this year.

You'll find links to all of the 'CAT at Home' activities and resources at cat.org.uk/catathome or go straight to our online events page to see what's coming up and to watch recordings of past webinars – cat.org.uk/webinars

And don't forget that our free information service is available for advice on renewable energy, sustainable building, and more - visit cat.org.uk/free-information-service or email info@cat.org.uk with your questions.

Zero Carbon Britain innovation lab explores solutions

In February we launched our first Zero Carbon Britain innovation lab, working with Staffordshire councils to explore barriers and opportunities in addressing the climate emergency and to learn how to work together effectively on the journey to net zero.

We are working in partnership with Keele University, the Carbon Literacy Project and 10 local authorities from across Staffordshire, including a mix of county, borough, district and city councils.

Through a facilitated process, involving multiple workshops, training and guidance, and spanning several months, we will support the Staffordshire Councils to better

understand their existing systems and the barriers to reaching net zero, to develop a vision of net zero Staffordshire and to co-design the interventions needed to reach that vision. We will support them in developing the tools and practices required for better collaboration both between councils and with communities across Staffordshire in order to achieve their goals.

What is an innovation lab?

An innovation lab is a highly designed and expert-facilitated process intended to support multi-stakeholder groups in addressing a complex problem, such as climate change, which aims to transform the current system in order to address that problem.

Typically, an innovation lab is:

- Co-creative – bringing diverse participants together to explore and understand the issues and co-design solutions.
- Experimental – taking an iterative approach to the challenges we are addressing, prototyping interventions and allowing for trial and error.
- Sense-making – supporting the participants to understand the system as a whole, what's happening and why.
- Systemic – developing solutions or interventions that go beyond dealing only with a part of the whole, or symptoms, and address the root cause of why things are not working in the first place. To create the conditions for new solutions to become accepted and adopted, a support system needs to be built around these solutions to make them sustainable and scalable.

CAT's Zero Carbon Britain team is busy developing other innovation labs, including a land use lab. Agriculture and forestry activities currently generate 24% of greenhouse gas emissions worldwide and 12% in the UK, so are a major issue in our journey to net zero. The lab will work with a wide range of stakeholders in these sectors to explore the barriers and opportunities in getting to net zero in relation to land use. More on this coming soon!

Virtual university visits

In a normal year, we welcome hundreds of students from different universities to CAT, with day trips and residential visits offering a mix of talks, tours and

practical workshops.

While the CAT site is closed, university groups have been able to visit us virtually, learning about sustainable solutions from home. In January, we ran our first full day's visit, with Leeds University students joining us to learn about zero carbon scenario planning and net zero solutions. The interactive online event brought together students from across the world, including people zooming in from their homes in China.

When CAT is able to welcome groups back on site, we plan to continue offering virtual group visits as they allow more people to access the knowledge and skills to help tackle the climate and biodiversity emergency. If you'd like to arrange a virtual group visit, please email Amanda at zcb@cat.org.uk

Visiting CAT this spring

As we go to press in the last week of February, Wales and the rest of the UK remain in lockdown so it's not yet clear when we'll be able to reopen the CAT eco centre to visitors and resume our on-site teaching and engagement activities.

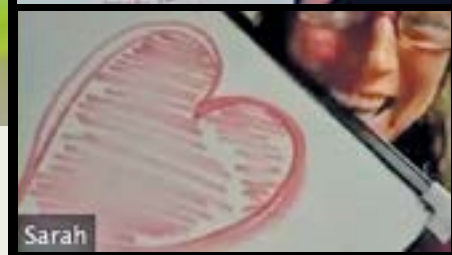
While we're closed, the eco centre is being looked after by a handful of staff working on a rota basis to cover essential tasks and keep on top of winter maintenance. Others in the team are on furlough to reduce costs (with wages topped up to 100% by CAT), while others continue to work from home delivering online teaching and training, running virtual events, producing new resources, offering advice and information, and providing admin support for all of these activities.

Having put in place covid safety measures last summer, we're in a good position to be able to reopen when it is safe to do so, and hope to be offering a full range of pre-booked visits, tours, short courses and study visits by the summer.

We will update our website as soon as we have news on reopening plans so please keep an eye on cat.org.uk for details.

Everyone at CAT would like to offer a heartfelt thank you to all of our amazing members and supporters. Because of the support of people like you we are able to continue sharing solutions to the climate and biodiversity crisis while the site is closed. We really couldn't do it without you – thank you.

Explore climate solutions from your home or garden



- Online courses
- Free webinars
- Family activities
- Information and advice

www.cat.org.uk/catathome

#CATatHome

JOIN THE CHANGE



Thank you to Patricia Norman: 1924-2020

Patricia Norman, a long-term supporter of CAT passed away on 2 December 2020 at the age of 96, kindly leaving a gift in her will to CAT.

We are grateful to have been remembered by Patricia and honoured to be able to let you know something of her extraordinary life.

A Quaker whose life was dedicated to supporting others, Patricia undertook medical training with the Red Cross during World War II, and went on to become an educator for adults and young people. She arranged elderly care to combat loneliness and taught children to read. Inspired to help address homelessness in Brighton, she was named the Brighton Housing Trust's first ever Life President. Throughout her life, Patricia supported many organisations that worked to uphold her values, advocating for peace, human rights, sustainability and the protection of animals and the environment. In 1975 she brought her young family to CAT. Her daughter particularly remembers lifting the lid on the methane production tank – and wishing she hadn't! Her husband was inspired to build his own 'solar panel', fashioned from a couple of old radiators painted black. It worked well for years (in the summer at least). Patricia continued to support CAT's work throughout her life, including through a final bequest in her will – a generous lasting gift from an inspirational woman.

Zero Carbon Britain: Live Online

Over 500 people have now taken part in CAT's 'Zero Carbon Britain: Live Online' course. Launched last year after events on-site at CAT were disrupted by lockdown, the course explores solutions to the climate emergency, looking at how we can transform buildings, energy, industry, transport, diets and land-use to create a zero carbon society.

We have now run six of these events, training a total of 518 people. Speakers include CAT's own Zero Carbon Britain team as well as a range of external guests, which

have included Andrew Simms of the Rapid Transition Network, Rob Hopkins of the Transition movement, Occupational Psychologist Jill Chapman, and CAT Trustee and renewable energy policy and law expert Sonya Bedford.

Feedback has been fantastic, with many people saying they were left feeling energised, enthused, informed and inspired to take action on zero carbon.

At the end of our January course 93% of participants said that they now understood what is needed to reach net zero, 86% understood the role of individuals and organisations in developing a net zero plan, and 97% understood the importance of themselves or their organisations knowing what is needed to reach net zero.

To widen the reach of this course, we are offering five free bursary places to help support those who would otherwise be unable to attend.

The next events take place on 29-30 April and 23-24 June. For more information on the course and bursary places, please visit cat.org.uk/zcb-training

Rose Jessica-Maia Bursary

In December, we launched the Rose Jessica-Maia Bursary, a new fund for CAT students created to celebrate the life of Rose Jessica-Maia, who died in 2018 at the age of 18.

Aimed at supporting someone who has experienced or is experiencing mental health difficulties, the bursary will cover half the tuition fees of a student joining a CAT postgraduate course validated by Liverpool John Moores University in September 2021.

Kaye Chambers, Rose's mum said:

"Rose was a loving, empathic person, passionate about animal welfare, the environment, being vegan and supporting LGBTQ rights, and someone who had the capacity to be alongside anyone who was struggling. During her life she experienced many difficulties which led to her experiencing mental health problems as a teenager, and parts of the last two and a half years of her life were incredibly hard.

"I hope this bursary will enable

others who have experienced mental health difficulties to study at CAT and go out into the world and contribute in a way in which Rose no longer can."

The bursary was launched on the 12 December 2020, on what would have been Rose's 21st birthday.

For more details, please contact Alis Rees, our Graduate School Marketing Officer, at gsmo@cat.org.uk or visit cat.org.uk/funding

Record applications to join CAT's Graduate School

Last September saw our largest ever intake of students to the CAT Graduate School – and this year looks set to be yet another record-breaker.

With applications to date already far higher than the same time last year, it's clear that there's a growing appetite for gaining the skills, knowledge and networks to help tackle the climate and biodiversity emergency.

CAT Masters degrees in ecology, food, energy, buildings, architecture, sustainability and adaptation, and behaviour change are all helping to build a growing body of changemakers who are helping share solutions across industry, government and civil society.

Application numbers for this year are so high that it's looking likely that we'll have to close entry to the programmes earlier than usual. If you are thinking of starting your studies with us this year please make sure you apply as soon as possible – we don't want any CAT supporters to miss out!

You can find out more about our courses, sign up for a virtual open day, and apply online at cat.org.uk/gse – or call Alis on 01654 705953 for more info.

New Eco Experience Vouchers

Looking for a memorable gift? Take a look at our new Eco Experience Vouchers – these can be used for our nature experiences, many of our short courses, entry to CAT's visitor centre or for booking a tour.

Find out more at cat.org.uk/experience-vouchers/ – and don't forget that you can also buy vouchers for our online shop and gift membership of CAT.

CAT membership is the perfect gift for anyone who cares about climate change and other environmental issues and wants to know what they can do to help.

BUY SOMEONE THE GIFT OF SUSTAINABILITY

“It’s always inspiring to hear people from CAT talking. You’ve inspired us for decades.”

Eluned Morgan AM



Buy someone a membership gift pack today and they’ll become part of CAT’s thriving and growing community of changemakers, plus:

- A gift welcome pack, explaining how to make the most of CAT membership
- Clean Slate magazine, packed full of news, views and practical tips – four times a year
- Unlimited free entry to our award-winning Visitor Centre – all year round
- A gift to unwrap on the special day
- And the knowledge that your gift helps support positive solutions to the challenge of climate change



MEMBERSHIP OPTIONS

Individual £30

Joint £36

Family £40

Why become a member of CAT?

Our members tell us that grappling with the urgency of and scale of environmental issues, like climate change, can feel overwhelming and huge. Being part of CAT and a wider community of people who are working on positive solutions to environmental problems can help.

Becoming a member of CAT is a perfect way to help CAT continue its extensive educational work and ensure that we can plan the future with confidence.

Contact Penny Rowland at CAT for more information 01654 705988.



Your views

Repaying our carbon debts

Dear CAT,
I've been thinking and reading a lot recently about the need to address the climate emergency.

I'm coming to the conclusion that it may be helpful to view this as two separate issues, like running revenue and capital accounts, or home living costs and a mortgage. Thus net zero carbon is how we need to live day to day; however, we also need to address the CO₂ put into the atmosphere from the past. If these two sets of carbon accounting are taken separately I think that what we need to do will become clearer and the responsibility of industrialised nations to clean up their previous CO₂ emissions will be apparent.

As someone who had an interest-only endowment mortgage with 17% interest rates, I well remember the stress when the endowment was shown to be insufficient to repay our capital investment, and over half of our pay went on the interest on our loan on a property in negative equity. I see parallels with the climate crisis now. If we can clearly see the debt as separate from our living expenses then we can get clarity in how to prioritise our limited resources. It may also help to explain the pain we are experiencing from having not addressed our historical debt.

We need to do both: work to live within the carbon budget the earth gives us to live day to day – net zero carbon – and repay the CO₂ loan we took out by using fossil fuels – remove CO₂ from the atmosphere.

Holly Day

#CATatHome webinars

We've had lots of fantastic feedback on our new webinar series – we thought we'd share a few of the comments to give anyone who hasn't joined one yet a flavour of the events.

"I like the format – relaxed but informative – not being preached to – imparting wisdom in a respectful way."

"Simple but effective; the speaker was engaging and engaged well with the Q&A."

"Worked really well on Zoom – I'm in the U.S. and would not have been able to attend if it was in person, so I'm very grateful."

"As many people have I'm sure, I've been to so many webinars over the last year. This one was refreshingly different in its efficiency.... [It] hit just the right tone, enthusiastic & knowledgeable, which was infectious. An inspiring webinar."

"Informative and helpful."

"I really liked the interactive parts and the Q&A box which had more info and tips from participants."

We've also had lots of comments on how straightforward the events are to join and take part in, with many people relieved to find that they can choose to simply watch the speaker, while others have appreciated the opportunity to join in the chat, ask questions and share their own knowledge.

To get a taste of our online events, you can view past webinars at cat.org.uk/past-webinars and you can see what live events are coming up at cat.org.uk/webinars

Write to us

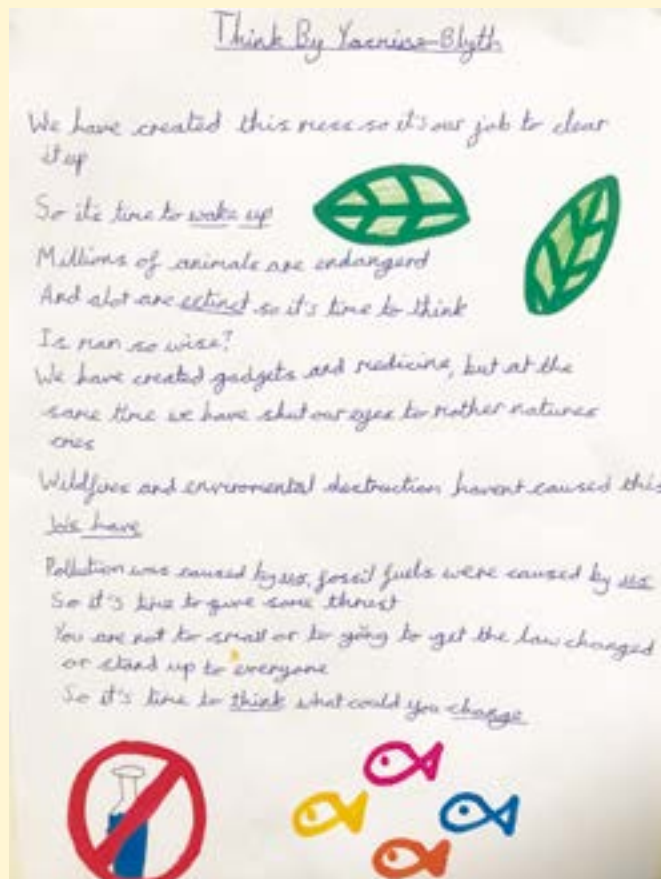
We'd love to hear your thoughts on the topics covered in this issue and other environmental solutions.

Is there a subject you'd like to see us cover? Do you have an idea to share? Or have you been inspired by a CAT course or resource? Don't forget that our Information Service is also here to give advice on what you can do in your own home.

Email members@cat.org.uk or write to us at Clean Slate, Centre for Alternative Technology, Machynlleth, Powys, SY20 9AZ.

If you'd like your letter to be included in *Clean Slate* please mark it 'For publication'.

Opinions expressed are not necessarily those held by CAT. We reserve the right to edit letters where necessary.



Time to think

Dear CAT,
We visited you guys last summer and had a wonderful time.

Our daughter Yasmine (aged 10 years) started an eco council at her primary school following our visit.

She really enjoys reading your magazine which we regularly receive.

Here is a poem she has written, which she has asked me to send to you.

All being well we are planning a return visit in the summer.

Gemma Blyth

CAT STORIES

CAT members, supporters, students, graduates and volunteers are making a real difference in the world. Meet some of our inspiring changemakers – and let us know your CAT story!



Tiziana Di Ronca

Tiziana and Sophie are both graduates from CAT's MArch in Sustainable Architecture Part 2 course. They are part of the inspiring committee behind the Re-Fabricate project which was recently named one of the RIBA (Royal Institute of British Architects) Journal's Rising Stars of 2020.

Launched in 2019, Re-Fabricate is a collective of architectural professionals unified by the ambition to eradicate waste from the construction industry, with participants collaboratively developing products that reuse waste.

Sophie says: *"The committee is now developing Re-Fabricate 2021, after several successful talks and features on the RIBA Journal website, and looking to maximise our impact through education, wider industry collaboration and engaging regions outside London."*

On studying at CAT, Tiziana says: *"Studying at CAT is a unique experience. My studies have been positively impacted by the absence of competition, which often occurs in architecture schools. CAT has been a home, a family and the greatest adventure I have undertaken up to this moment in time."*

Alongside developing the project, both Sophie and Tiziana are continuing their work in industry, with Sophie working as a freelance architectural assistant and Tiziana working as an architect in an architectural firm in London.



Sophie James



Mark Siddall

Mark is principal of Low Energy Architectural Practice (LEAP), helping people create sustainable low energy homes.

Mark's interest in sustainable architecture began in 1991 when he first visited the visitor centre at CAT. Inspired by the innovative houses built on-site, the Wates House and the Segal House, he began a lifelong interest in sustainability which, 14 years later, led him to translate Passivhaus standards documents into English and to evaluate the physics of Passivhaus as to its suitability for the British climate.

His practice and consultancy has been operating for nine years, providing architectural services, Passivhaus consultancy and, as a part of the CarbonLite programme, training for architects, engineers and trades.

Mark says: *"My plan, and the plan for LEAP, is to keep on supporting change and to help those that want to make a difference. We must refurbish the homes where we live, and we must demand better standards of design and construction for every new building."*



Cara Naden

Cara is Environment Officer at South Somerset District Council. She attended our 'Zero Carbon Britain: Live Online' course in September. Through previous roles in sustainable development and community leadership, she became a fan of CAT and the work done by our Zero Carbon Britain team.

She says: *"I felt this course would enhance my knowledge, experience and communications by giving me resources and ideas to use in my current role helping the council and community get to carbon neutrality by 2030."*

Cara hopes to use the resources and stories from the course and from CAT's research to create an empowering educational programme for her fellow workers and elected members, aiming to bridge the gaps in education, and to help prioritise action on the climate emergency.

This is just a small selection of the thousands of members of the CAT community who are making the world a better place. We love hearing about the work you are doing, the groups you are forming and how CAT's practical work is guiding and inspiring you. Please get in touch to tell us what you are doing. Contact members@cat.org.uk with your CAT story.

CAT – a story of regeneration

Here at CAT we've spent nearly 50 years researching and sharing solutions to complex environmental challenges. **Tanya Hawkes** looks at how small-scale experiments and prototypes have fed into big picture developments that are contributing to the shift to zero carbon.



The CAT eco centre nestled in the Dyfi Valley.

Crown copyright © VisitWales.com

For nearly five decades, CAT has provided a laboratory of sustainability, solving the most complex of environmental questions. Every aspect of the site at CAT and the education we provide to visitors, school groups, masters students, course participants and policymakers from all levels is an example of how human activity can co-exist with the natural world and even complement it.

Throughout human history societies have existed as part of nature, rather than something separate, detached. There is a narrative, still embedded in some conservation circles, that nature must be separate from humans to survive, fenced off and distinct. There is actually much evidence to show that populations throughout the world live and work within and as part of nature,

with nature and humanity managing and shaping each other in ways that sustain life.

At CAT we have our own living laboratory, showing how humans can coexist with the rest of nature and regenerate neglected areas.

All of our work is geared towards a future where people enjoy, learn from and protect the ecosystems that we are part of. The very site that CAT occupies is an example of recovery from industrialisation: a disused slate quarry beginning to rewild in scattered and patchy places.

The people who first came to CAT as volunteers – with a strong desire to try a different way of living and working – did more than allow the trees to grow and the wildlife to creep back in. They experimented with making soil to grow

abundant food. They designed circular water systems that left very little trace. They experimented with construction techniques – new build and retrofit – that left no long-term impact on the area. They constructed renewable energy systems that replaced the need for fossil fuels. They managed and shaped the surrounding woodlands so that endangered species could thrive again.

But we have gone so much further. CAT's expert researchers have developed ways of incorporating natural methods of building, and urban and rural design that can help us adapt to climate change impacts, and collaborating with other experts across the world to ensure that the effects of climate change and other environmental damage can be minimised if techniques are scaled up. ►

Buildings

When volunteers arrived at CAT nearly 50 years ago they made use of the existing slate cottages, retrofitting and experimenting with insulation and energy efficiency. Many of the original slate buildings are incorporated into the infrastructure of CAT's visitor centre.

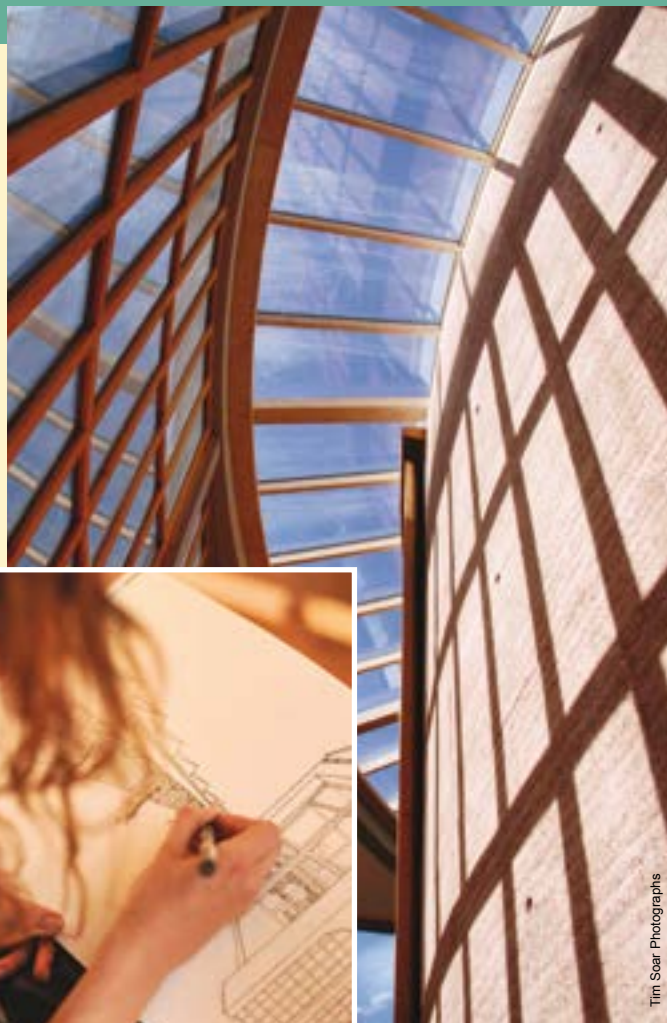
Later, CAT's building department developed some of the most cutting edge techniques in low carbon buildings using green oak, lime render, strawbale buildings, rammed earth and timber frames, building techniques that exist in harmony with the ecosystems around the site. Our award winning buildings are used by staff and students, and people from all over the world come to CAT to study the groundbreaking building techniques used in CAT's Wales Institute for Sustainable Education (WISE).

CAT is now a world leader in sustainable architecture. Lecturers teach Masters students in our 7 metre tall, round, rammed earth lecture theatre – an extraordinary example of a building material that can be sourced locally, can regulate the temperature with its thermal mass, and is architecturally beautiful.

The construction industry is changing. CAT is helping lead the way by training thousands of students in building, planning and architecture, feeding into a new vision for a building industry that prioritises energy efficiency in both new build and retrofit, leaves little environmental impact, supports and blends in with the environment, and transforms cities and communities into havens for biodiversity, with space for nature as a key part of urban planning.

Many of our students have developed their own businesses to help transform the construction industry, with all the co-benefits of economic green growth and much needed low carbon jobs.

Check out our courses and online information centre for much more on natural and sustainable building materials and methods.



Water systems

CAT's circular water system is a test bed of what's possible. Starting in our reservoir, water is cleaned through sand filters to provide drinking water, runs through a hydro turbine for electricity, and powers our water balanced cliff railway.

On its ecological journey our water is home to many species of animal: frogs, newts, fish, otters, invertebrates, and all the other animals and birds that rely on our ponds and streams for food and water.

Our compost toilets minimise water waste, and the reed bed filters by our eco cabins help school pupils learn about the water cycle and how to treat wastewater with minimum impact.

We transfer this research and knowledge to larger areas of work in cities and rural areas. Blue and green infrastructure will enable cities and urban areas to adapt to climate change: rain gardens to absorb flash floods; urban tree planting to help minimise pollution; sustainable drainage systems; green roofs to help cool urban heat islands.

There are 1.4 million more urban dwellers each week as people migrate from rural to urban areas and these are the skills and infrastructure needed to make our cities and towns resilient to climate change.

CAT's staff and lecturers are teaching urban planners and the next generation of architects and builders these vital future-proof skills. Take a look at the information pages on our website or check out our range of courses, including a short course on Reedbeds and Waste Water Management and a Masters in Sustainability and Adaptation in the Built Environment.



Renewable energy

CAT has been a demonstration centre for renewable energy for nearly 50 years. From the primitive wind turbine created in the 1970s to the solar electric (PV) roof above CAT's courtyard, which at the time of installation was the UK's largest PV array.

For decades CAT engineers and academics created a renewable energy mix of hydro and wind turbines, solar panels, heat pumps and biomass boilers connected by a microgrid. The modelling and monitoring of this system, combined with testing their capacity in heating and lighting the offices, homes and accommodation across CAT, gave us vital technological knowledge of how the UK as a whole could scale up its renewable energy capacity whilst ensuring a constant supply at the right times.

Now we sell energy to the grid when we are above capacity (buying green electricity from the grid at other times) and we use our heat pumps, hydro turbines, biomass boilers, solar thermal panels and photovoltaic roofs as training tools for our Masters students and as demonstration and learning exhibits for school pupils and visitors.

Short courses, such as our Energy Provision course, offer the chance to learn how to use wind, water and solar power on small and community scales. Or you can learn alongside our Masters students gaining knowledge of solar thermal, district heating systems and the pros and cons of carbon capture and storage (CCS) and biofuels. You can find out more by taking a look at our renewable energy information pages and our list of upcoming courses online at cat.org.uk



Woodlands

With the help of our supporters, CAT purchased the woodland opposite our site ten years ago. Since then our woodland team have been working to restore the area to a mixed leaf native Welsh woodland, thriving with bird and animal life. Hundreds of people come to learn each year about managing small woodlands, which trees to coppice and which to grow for maximum flood prevention and other benefits, and how woodlands and forests fit into an environmentally sustainable future.

How we manage woodland, forests and the land under our feet to mitigate and adapt to climate change is one of the key questions CAT is exploring.

Our Zero Carbon Britain team and our academic staff and students are examining types of short rotation forestry for low carbon energy, for example, and looking at how timber can be grown for use in buildings or converted into biochar to capture carbon. Our students are learning about the issues of 'carbon leakage' in accounting for carbon when timber is imported or exported, and how our government can work with other nations to ensure full carbon accounting takes place, in line with the aims of the Paris Agreement.

These are complex, transboundary questions. CAT is developing solutions that have the co-benefit of providing new jobs, economic stability and healthy regional biodiversity. You can read about these solutions in our Zero Carbon Britain: Rising to the Climate Emergency report, published in 2019.




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Creating the future

Here at CAT we've spent nearly 50 years working towards the future we know is possible, all with the help and support of our members and donors. As action on climate change and biodiversity loss become ever more urgent, we are scaling up, with ambitions to share tried and tested solutions with an ever greater number of people.

Last year saw the largest ever intake to our Graduate School of the Environment and the launch of our new Zero Carbon Britain Hub and Innovation Lab, which is providing training to councils, community groups and industry for

effective zero carbon planning. Over the next five years we have plans to do so much more.

Thank you so much for being part of this journey to experiment with, learn about, share and scale up solutions as we all work together towards a future where people can live sustainably as part of a thriving natural world. 

About the author

Tanya Hawkes is part of CAT's fundraising team. She is currently researching a just transition to zero carbon as part of the CAT MSc in Sustainability and Adaptation.

Booking courses at CAT

As we go to press the CAT eco centre remains closed. We are taking bookings for future courses, with a full refund available should these be cancelled or should you be unable to attend owing to covid restrictions.

#CATatHome

We may be closed, but you can still access our free information service from home, and you can also take part in free webinars and a selection of online courses. Take a look at www.cat.org.uk/catathome for links to online information and events.

DIVERSITY, INCLUSION AND CAT

One of our priorities for the next few years is to improve diversity and inclusion at all levels across the organisation. Trustee **Sally Carr** outlines our key commitments and explains why this is so crucial to CAT's mission.



CAT has recently been refreshing its organisational strategy, setting out the vision, mission and strategic priorities for the next five years, as well as describing a number of key principles underlying our work. One of these is that CAT is “*Inclusive* – we believe in the transformative power of diversity, inclusion and equality.” Putting this in context, the strategy includes the following paragraph:

The environmental movement in the UK is dominated by a single demographic: the white middle class. There are a variety of systemic roots to this situation that no single organisation can hope to change on its own; nonetheless, one of our key aims for the next five years is to increase diversity and inclusion at all levels in our staff body and across key audiences, helping us benefit from and engage with a wider range of voices and perspectives as we build a movement for change.

It is worth noting here that we are not saying that white, middle class people are the only ones engaged in environmental work, but that environmental work carried out by other groups is often overlooked by organisations dominated by this demographic. One example of such a group is Wretched of the Earth, a “grassroots collective for Indigenous, black, brown and diaspora groups and individuals demanding climate justice and acting in solidarity with our communities, both here in the UK and in the Global South”.

The events of summer 2020 and the increased media attention to the Black Lives Matter movement highlighted the need for all sections of society to take action to address issues of systemic racism.

At CAT, this has been the subject of many recent discussions within and among staff, management and trustees, as well as with students from our graduate school and members and supporters. While CAT has always welcomed diversity and aimed to be inclusive, we recognise that we need to be more proactive, not just in relation to racism, but in terms of diversity and inclusion in all areas. This encompasses all of the protected characteristics, such as race, age, religion, gender and disability, but in addition, people of different backgrounds and viewpoints.

In the coming time we are renewing our commitment to action, at four levels:

1. Increasing reach and representation

We will find ways to increase numbers of groups currently under-represented among all our stakeholders, including trustees, staff, students, members and visitors.

One way we can approach this is to use networks and channels that can help us ensure that advertisements and promotions are likely to be seen by diverse audiences. For example, I have recently been in discussion with Malcolm John, who is leading a campaign within the Association of Chairs to increase

diversity among charity trustees, about ways we could widen the audiences likely to see and respond to trustee vacancies.

Reviewing the wording of job advertisements to make these more attractive for different groups is a further important step. We can also look to provide opportunities for people from under-represented groups to find out more about CAT through dedicated days or programmes.

As an organisation based in Wales, we would like to increase the number of staff – particularly at senior levels – who come from the local area, and who are fluent speakers of Welsh. One way to address this may be to put more emphasis on training and development of employees, so as to enable them to progress within the organisation and take on more senior positions.

2. Ensuring an inclusive and enabling environment

It is vital that we ensure that we create an environment that feels inclusive and enabling to all. This may entail changes to physical layout – for example, for the past few years we have had some toilets in the WISE building and café designated as “gender-neutral”, to provide for people of non-binary gender. New developments on site need to be made with accessibility issues kept firmly in mind.

Equally important is staff training and development, so that everybody is treated with respect and in the ways they would like to be treated. We will include diversity and inclusivity training as a standard part of new staff induction, as well as offering ongoing refresher courses for existing staff.

3. Relevant content

We will continue reviewing the content of CAT’s educational messages, whether in displays onsite, tours and lectures for visitors, short courses, programmes for school groups, or graduate courses.

We want to ensure that we are representing issues that are relevant to people from all different sections of society, and that we do not make assumptions that seem to exclude some people.

Some years ago, I recall taking part in a session during one of CAT’s Zero Carbon Britain short courses about ways in which energy and CO₂ impacts of a home could be reduced. Part way through the session, a participant put her hand up and said: “This is all great if you own your own home, but what about those of us who live in rented accommodation – what are we meant to do?” We are very conscious of the need

for CAT’s messages to be relevant to the wide variety of situations in which people live and work.

4. Highlighting the need for climate justice


It is important that we understand the links between systemic racism and environmental and climate justice in order to properly address the solutions to climate change.

CAT has a history going back decades of including climate justice and global equity in its education programme, through its work with schools and teachers, as well as with older groups – its activity in this area was pioneering at the time.

More recently, CAT’s 2017 *Zero Carbon Britain: Making it Happen* report included a section specifically addressing the links between global inequality and climate change.

Over the last few years CAT’s Graduate School of the Environment has increased its teaching about the connections between climate change, racism and global inequality, and this is an area we will continue to emphasise in all our educational work.

Why do we want to do this? Well, one reason is that it’s the right thing to do from an ethical standpoint and means that our commitment to value all individuals and diverse voices is put into practice. But just as importantly, it is the only way in which CAT can be most effective as an organisation. On the one hand, greater diversity of staff, trustees, students and members will bring a richer set of ideas and viewpoints, leading to increased creativity and a more complete picture of the issues. On the other, it will help us reach out further in terms of inspiring, informing and enabling people from all backgrounds to respond to the climate and biodiversity emergency – in other words, achieving CAT’s mission.

We would love to hear from you if you are keen to help CAT continue its diversity and inclusion journey, especially if you have expertise, ideas or contacts that you feel may be beneficial. Please email your thoughts to ingrid.odonnell@cat.org.uk. 

About the author

Sally is Vice Chair of CAT’s Board of Trustees. Before joining the Board, she headed up our fundraising team, having previously spent many years volunteering at CAT during her holidays. She has a background in organisational psychology and 20 years’ experience in leadership and team development training.

Climate and racism – what’s the connection?

Michael Lomotey argues that if climate change is to be checked, its racist implications must be addressed.

Is climate change a racist crisis? Yes, simply because those who have done the least to cause the problems are the ones who are suffering the most. But why is this racist? Because as a result of colonialism and imperialism some peoples have gained at the expense of others. Intentionally.

European powers had an insatiable thirst for wealth that caused them to ride roughshod over other nations. Inextricably part of this was an extractivist, growth-based model of consumption. This drove these empires to abuse the environment to the extent that major global change is now being experienced, threatening to undermine society as we know it.

Growth and profit driven systems rely on the inequality and inequity of a social structure, the policy and practice of which is constructed to benefit the interests of a few whilst dehumanising its victims. The protagonists of colonialism used racial characteristics as a guide for who to exploit and where.

Moreover, now the damage to the climate is causing severe impacts, the already exploited are going to be those who suffer the most. Climate change is, therefore, a racist crisis.

Historical roots of climate change and racism

We already know from the science behind the Intergovernmental Panel on Climate Change (IPCC) ‘Global Warming of 1.5°C’ report that the global outlook is extremely challenging as a result of human-driven warming. A look at the roots of the climate crisis helps to illuminate the links between where we are now and the colonial past.

As feudalism gave way to mercantilism, economic policy, including not only economic theory but a regulatory framework, was created to manipulate and govern trade. Its aim was to consolidate the power of the state and facilitate the acquisition of wealth. Top-down regulation for nation building drove policies that benefited European

states’ vested interests, but there would always be a loser in this exchange where ‘competition’ and trade wars relied on ‘might is right’. The expansion of colonial empires, with countries invaded and seized for resource stripping, resulted in vast revenues and in turn drove ever more theft.

The mercantile system evolved into capitalism with its individual libertarian ethos, and the state itself increasingly became the servant of a wealthy minority, especially as it embarked upon imperial expansion with the seizure and exploitation of overseas colonies and the subjugation of their populations.

This fits with the definition of racism which influential Black feminist Patricia Hill Collins explains as “*a system of unequal power and privilege that unevenly distributes reward to groups based on their racial classification.*” Power and privilege governed the systems of colonialism, giving white supremacists their ‘right’ to victimise Black and Brown people.

Recent research has highlighted how the wealth that was accumulated as a result of the enslavement of African people, and by the equally brutal

subjugation of the New World, provided the revenue to undertake the industrial revolution, with its resulting emissions.

Unpacking the economic history of Britain exposes the detail of the Atlantic slavery period from the 15th and into the 19th Century, and how it paid for the industrial revolution. Even the renowned ‘free market’ economist Adam Smith agreed that slavery was a fundamental part of the economic system of his time.

The development and growth of financial institutions, insurance, credit and other banking services for commerce resulted to a considerable extent from the vast injections of capital gained from the economics of enslaving Africans. Seminal works on empire by Eric Williams and Joseph Inikori have exposed the role the trade in enslaved Africans played internationally and how it had a very significant bearing on developing large scale commodity production in Britain and Europe, thus powering the industrial revolution and its concomitant emissions.

Racism has roots in this enslavement and dehumanisation of African people for profit, therefore the links between climate change and racism

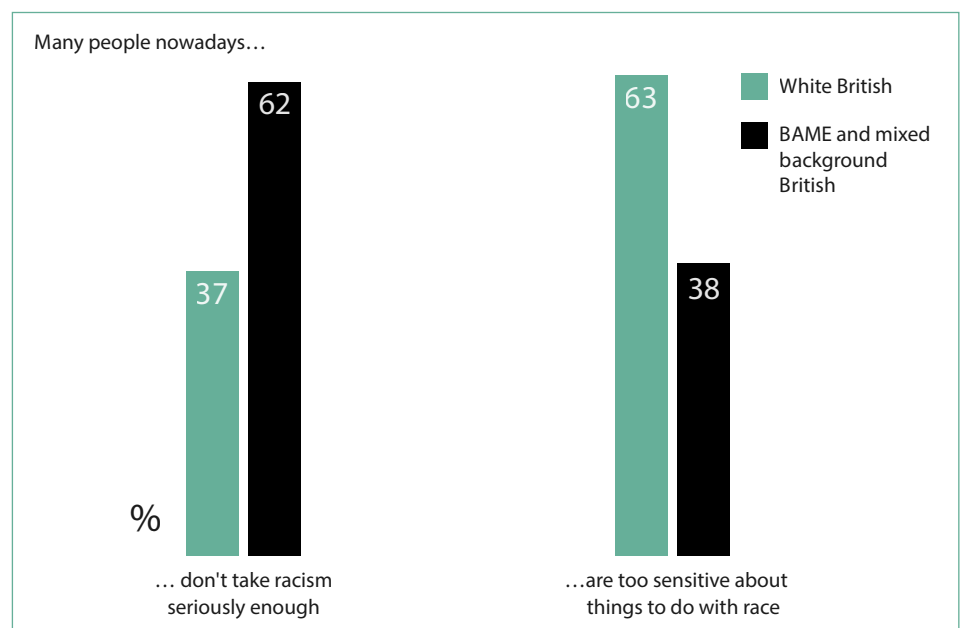


Figure 1. Black and White perspective on racism. Source: *Britain Talks Climate*, Wang et al., (2020).



Much policy in Western countries is looking at a 2°C temperature rise or more when even 1.5°C is an existential threat for countries like Kiribati.

need to be recognised. Why this has not received enough exposure and acceptance is an interesting question. Maybe it is to do with the framing of trade and economics. According to Guyanese historian Walter Rodney, the enslavement of Africans should not be seen as a measure of trade but as a measure of social violence perpetuated for monetary gain.

Recent work by Climate Outreach indicates that a large number of white people do not believe racism per se to be an issue, which speaks of how engrained it is societally and how problematic it is for climate adaptation and mitigation (see Figure 1).

An important weapon in the European imperial armoury was to relegate the people of the colonised territories to a category lower than the white European, to a classification as less than fully human, creating a premise that whites are a better and superior form of the human species. This was colonialism justifying its actions, with its roots in the Curse of Ham which was initially used by Arabs as anti-Black racism for their justifying of the enslavement of Black Africans. The curse began to be publicised in Europe during the 15th century, coinciding with the circulation of a series of infamous papal bulls that sentenced Africans

to 'perpetual servitude', promoted the enslavement of the people of West Africa and instructed the subjugation of the New World and the enslavements of its inhabitants. This was the era when the Portuguese began the enslavement of Africans in earnest.

These papal bulls should not be seen as only of theological interest, but as overtly racist policy interventions, containing a fully racialised intent to facilitate the mercantile/capitalist systems of growth by dehumanising the people of Africa and the New World.

Power and privilege is a problem when it's not a problem to you. The likely impacts of climate change do not recognise colonial or modern borders. Yet, where climate change arises from growth driven extractivist consumption it is overlaid with exploitative and unequal systems that also degrade ecosystems.

These human-created problems will have global impacts, which has led to this age being referred to as the Anthropocene, the successor to the Holocene. As we unpack industrialisation with its links to colonialism and the reinvestment of abolition compensation into the UK economy by the slave owners, it may be more accurate to refer to what Françoise Vergès suggests is the Capitalocene.

There are two central aspects of Vergès description that are particularly relevant: firstly, it reflects the role of imperialism and capitalism in pushing climate drivers; and secondly, the Anthropocene implies all humans are responsible for the state of the environment when some are very much more responsible than others.

Emissions and warming impacts

The mechanisation of mills processing cotton from slave plantations with their coal and steam-driven engines, and the subsequent large scale use of other fossil fuels such as oil and gas, pushed emissions and accumulations of CO₂ into the atmosphere.

There is a large body of evidence indicating that grave problems will occur in the Global South at 1.5°C of global warming. Island states in the Caribbean for instance call for "1.5°C to stay alive," recognising that under all IPCC scenarios, sea level rise is an existential threat for many coastal communities. Much policy in Western countries is looking at a 2°C temperature rise or more, which is tantamount to deciding which Black and Brown people are going to die – racism writ large and a massive equity challenge.

It is not possible to be impartial whilst the world burns, when stolen land and lives enrich oppressors who continue to exploit, extract and emit. Science cannot remain aloof when it can envision an apocalyptic end for the world, but yet cannot succeed in bringing an end to the economic system that is causing it.

Climate justice is about recognising that the science is clear on climate change, but also that it is the systems, the market forces, the neoliberal order and the dominance of capital that currently drive the process.

Plans for the future must be collaborative, with previously marginalised voices centred. Systemic racist systems have to be broken down and we need to mitigate the effects of power and privilege. Do we have time? In the words of the medieval scholar R. Hillel, "If not now, when?" [CS](#)

About the author

Michael Lomotey defines his work around the human rights impacts of tourism, anti-oppression and adaptation. He is an RSA Fellow and a passionate organiser for climate justice. He has just completed an MSc at CAT, writing about this topic in his dissertation. References available on request.



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What next for councils who have declared a climate emergency?

Around three-quarters of local authorities in the UK have already declared a climate emergency. CAT's **Anna Bullen** and **Anthony Hurford** look at how to move beyond declarations towards effective action.

At CAT's Zero Carbon Britain Hub and Innovation Lab we have contact with councils from across the UK on most days – councils that have declared a climate (and sometimes ecological) emergency and are now faced with the all-important question: 'What next?'

Different councils will ultimately need to implement different measures to address the climate emergency, depending on their size, locality, jurisdiction and responsibilities. We firmly believe, however, that if they have declared an emergency, then developing a climate action plan that sets out how they are going to address the emergency is the essential next step for all of them.

Planning for net zero

A climate action plan is crucial for many reasons: it sets out the measures needed to get to net zero by a target date; it represents a commitment to properly addressing the climate and ecological emergencies; and its creation provides an opportunity to bring communities together around a focal point.

Local authorities are in a unique position to facilitate and lead this process given their knowledge of and roles in local communities, but cannot be expected to have all the answers. Without widespread cooperation, any plan will be much more challenging to roll out in such a complex modern society and economy.

The creation of a plan in collaboration with diverse communities is an opportunity to design a future that works better for everyone, not just in relation to the climate and natural environment but the many other issues of fairness and opportunity that deeply affect people's lives. This is recognised all the more as a result of the coronavirus pandemic. Such a process can itself mark the start of a new way of doing things, taking account of the different perspectives and knowledge people bring, and navigating difficult issues through engagement and


increased understanding.

Of course, we are seeing significant variations between the climate action plans being produced, often reflective of varying council jurisdictions and resources. Some councils are producing their plans on low/no budget, largely drawing on the support of volunteers, whilst others are commissioning plans from consultants. However, it should be noted that a large budget does not necessarily lead to a better plan, especially as the key factor in achieving what it contains is likely to be the motivation of people to go above and beyond to support it. This is much more likely to happen if people feel that they were listened to and that the plan actually addresses their own needs and aspirations, so they have something to gain from it. Process is all-important here, so budgets and volunteer time should be spent wisely.

New local authority checklist

Climate Emergency UK, with input from CAT, Friends of the Earth and Ashden, have recently developed a Local Authority Climate Plan Checklist, which aims 'to help local authorities draw up ambitious, comprehensive and robust Climate & Ecological Emergency Action Plans, and to enable community groups to assess the ambition of their own local authorities' plans'. The checklist details the creation and presentation of a plan, the components of a strong plan, and the commitment, governance and funding required to deliver on it. It includes a chapter on specific actions that can be taken in different areas under council control or influence. Good practice is illustrated through case study examples and there is a list of resources that other local authorities have used which might be useful to others.

Keep an eye out for updates on our work at the Zero Carbon Britain Hub and Innovation Lab at cat.org.uk/zcb, including our new Zero Carbon Britain

online resource hub, which is launching in spring 2021, and will be crammed full of filterable online content for inspiring, informing and enabling local action on the climate and ecological emergency. 

About the authors

Anna is CAT's Zero Carbon Britain Innovation Lab Manager, working with a range of stakeholders to research, prototype and test climate solutions. She is an experienced and qualified facilitator and project manager, with 25 years' experience in the sustainability sector, and is a firm believer in the use of co-creation methods in order to design effective and meaningful solutions to issues such as climate change. She has a PhD in Sustainable Citizenship.

Anthony is CAT's Zero Carbon Britain Hub Project Manager, leading on the new online resource hub and supporting the Hub's training programme and innovation labs. He has a background in managing large research and consultancy projects, and developing collaborative management approaches for complex environmental systems – the focus of his civil engineering PhD and post-doc research.

Find out more

You can download the Local Authority Climate Plan Checklist at <https://bit.ly/3amzL2c>

To keep up to date with the work of the Zero Carbon Britain Hub and Innovation Lab, sign up to the CAT newsletter at cat.org.uk/sign-up

Our next 'Zero Carbon Britain: Live Online' training course runs from 29 to 30 April – find out more and book your place at cat.org.uk/events.

We also organise bespoke training courses to meet the needs of councils, community groups or businesses.

If you'd like to know more, please email us at zcb@cat.org.uk

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COPING WITH THE CLIMATE CRISIS

As the climate crisis deepens, more and more people report feelings of fear, anxiety and depression. Psychotherapist **Ro Randall** offers some ideas on how to cope.

The feelings which arrive when you let yourself think about the climate crisis properly can be overwhelming. People describe feeling shock, feeling disorientated, being pole-axed by fear and knocked sideways by their own sense of powerlessness. Sometimes there is a panicky sense of disbelief – ‘This can’t be true, surely it’s not true.’ Often people are angry. Sometimes there are terrible feelings of guilt and shame, particularly if you are someone who has ignored the facts for a long time.

Experiences like these are increasingly being referred to as ‘climate anxiety’. I prefer the term ‘climate distress’, partly because it doesn’t have the overtones of a diagnosis, and partly because people are usually describing a

whole range of painful feelings, many of which are not anxiety.

We don’t know how many people in the UK suffer from climate distress but research from Finland provides some pointers. A study there found that 25% of people reported experiencing climate anxiety, a figure that rose to 33% amongst younger people aged 15-30.

It’s normal to be upset

It’s important to recognise that these distressing feelings are normal. They are the feelings we all have when we receive a piece of very bad news, something which, like the death of someone close to us, is life-changing. As they face the climate crisis, people often describe finding themselves questioning their values, their plans for the future, and

their sense of identity. Some find themselves in difficult conflicts with family and friends. Some feel trapped in a life which they can see no way of changing while others leap into manic action as a way of blocking out the painful feelings.

What helps?

It’s important not to deny or belittle this kind of pain. Listening to it and giving it space is usually the best way to move past its intensity and live with its beat more creatively. I often use an adaptation of William Worden’s work on grief and loss as a framework for helping people move through these painful feelings. This suggests there are four tasks which you can either face into or turn away from:

1. Accepting the reality of the crisis.

This usually happens intellectually first, with the emotions catching up as you allow yourself to reflect on what the crisis means for you and what it calls on you to do.

2. Working through the painful emotions,

mourning what is lost. The losses may be connected to the sense of a vanishing natural world but just as important are the losses of the life you may have expected to lead, whether this is a retirement filled with foreign holidays, a career in a high-carbon industry or just a life without fear of floods, storms, droughts and upheaval.

3. Adjusting to the new environment,

reshaping a sense of identity, finding support and solidarity with others. Reflecting on your values, reconsidering the way you live and what matters to you, is usually important.

4. Choosing a path of action,

reinvesting emotional energy. Becoming able to use the energy of your anger is often important here.

In all of these tasks finding people to talk to who will listen with curiosity, care and respect is crucial. People need to talk about the big issues that the climate crisis throws up for them personally. Should I have children? Is it ok to stay in my current job? What do I tell the kids? How do I convince my husband/wife/parents/partner? If you're trying to help someone don't offer false reassurance but listen and try to understand what they are experiencing. Walk beside them.

Gradually people become able to move away from a preoccupation with the awfulness of what may happen and find a way to live courageously and well in the difficult present. It slowly becomes possible to see a path to living differently. The grief and painful feelings never disappear completely – these tasks aren't linear – but they can ease and leave you free to act effectively.

The role of action

People often prescribe action as the solution to feelings of climate distress. Action is very important: it helps give you back some sense of control and often stops people feeling completely overwhelmed. In order to act effectively however, people also need to stay with the dark feelings long enough to explore and understand them. For some people moving prematurely into action means they adopt only those minimal actions that will fit around their existing lifestyle while anxiety hovers perpetually in the background, paralysing and depressing



them. For others, throwing themselves into all-consuming action is a way of blocking out the intolerable feelings but these inevitably return in the form of burnout and exhaustion.

Through my research and through my work in the community with people who are struggling with their feelings about climate change, I've identified six things which seem to make a difference psychologically as you move towards action:

- Work with others. This shares the burden, provides support and allows for shared experiences of success and failure. There are many groups who will welcome your involvement.
- Bring your life into alignment with what you now know. Reducing your impact as far as you can helps give you an immediate sense of control and restores a sense of integrity to your life.
- Look for balance. Try to balance actions which are about stopping something – protesting about airport expansion, for example – with actions that are about creating something – making your back garden wildlife friendly, experimenting with vegan cookery or volunteering with an outdoor project.
- Let go of the climate news. Don't torture yourself by revisiting it every day. The important thing is integrating the knowledge into your life, not punishing yourself by dwelling on it.
- Make time for the ordinary joys and pleasures of life: spending time with family and friends; sharing a meal or a drink; pursuing the pastimes that have always given meaning to your life.
- Keep talking, listening and giving space to your feelings and those of others.

Professional help

For some people, the feelings induced by the climate crisis don't go away and can feel unmanageable.

Young people whose families are unsympathetic or who are unable to take part in any form of action are likely to be more susceptible to continued experiences of distress.

Older people who feel locked into high carbon lifestyles and are unused to political or community action may struggle to see what they can do and remain trapped in feelings of distress.

If you, or someone you know, is suffering in ways that feel beyond your help, seeing a psychotherapist or counsellor may be useful. The Climate Psychology Alliance offers three free sessions of psychological support. Private therapists can be found by looking at the Counselling Directory site and your GP may be able to refer you for counselling through the NHS.

Climate Psychology Alliance:

climatepsychologyalliance.org

Counselling Directory:

counselling-directory.org.uk 

About the author

Ro is a psychotherapist. She has been involved in climate issues for many years, is the co-founder of the Carbon Conversations project, a founder member of the Climate Psychology Alliance and is currently active with Cambridge Climate Therapists. Her videos on Coping with the Climate Crisis can be found at cambridgeclimatetherapists.org

Learn more

Ro recently ran a CAT webinar on this topic – you can watch a recording of this event and other past webinars on our website, where you'll also find details of upcoming online events and courses: www.cat.org.uk/past-webinars

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Greater horseshoe bat – hanging around at CAT

Once a barren slate quarry, CAT is now home to a wide range of plant and animal species, but one recent sighting is cause for concern as well as celebration. **Dulcie Fairweather** reports.



Greater horseshoe bats are one of the UK's rarest mammals (RudmerZwerver/Shutterstock).

A dreary December day last year saw the unexpected discovery of one of Britain's rarest mammals here at CAT – a hibernating greater horseshoe bat.

Rarely found in the UK outside of south west England and south Wales, this is amongst only a tiny handful of sightings this far north.

The surprising find, made by licensed ecologist Anthony Hodges when carrying out a survey of an existing lesser horseshoe roost in one of our buildings, is both testament to the value of sensitive habitat management and cause for concern over a possible link to the impacts of climate change.

A specialist hunter

Greater horseshoes are roughly the size of a small pear, with a wingspan of up to 40cm and a weight of around 30g (the

equivalent of three pound coins!). These fascinating bats have been known to live up to 30 years, and have the longest recorded age of any European bat.

The species takes its name from its complex horseshoe-shaped nose leaf, used for its echolocation system to navigate and to locate prey. Their diet consists of moths, beetles, caddisflies, craneflies and gnats, which they catch by low-flying hunting. Their behaviour is similar to flycatchers (another species that makes a home at CAT) as they watch from a regular perch and then fly to snatch passing insects. Large prey is taken back to the feeding perch, with fallen insect remains most evident in spring or autumn.

In winter, the species will use caves, disused mines, cellars and tunnels as hibernation sites. Bats, in their search for suitable temperatures, will wake from

hibernation at frequent intervals. In fact, movements of 30km between sites have been recorded.

The flight of the greater horseshoe is low and fluttering with brief glides. As with other British bats, they are most readily identified with the use of a bat detector. They utilise long constant frequency echolocation calls at about 82 kHz which is picked up as a continuous warbling.

The climate change link

It is thought that Britain's greater horseshoes declined by as much as 90% in the 20th century, with remaining populations being localised and scarce. Reasons for this decline include loss of roost sites and foraging areas owing to changes in building use and agricultural practice.

The past decade has seen a gradual



Lesser horseshoe bat hibernating at CAT (Dulcie Fairweather).

recovery, but it's not all good news. Recent evidence suggests that warmer temperatures caused by global heating may be a key factor in the bat's recovery and the extension of its range. The discovery of a hibernating individual at CAT is further evidence of this northwards expansion.

Whilst this may be positive for the greater horseshoe in the short term, our changing climate provides a far less rosy picture for the majority of our native wildlife. The negative impacts of rising temperatures and extreme weather events have already begun to bite, including food shortages, habitat destruction and disruption to breeding and migration patterns.

This is of course just one of the many reasons that we need radical action now to combat the interconnected issues of climate change and biodiversity loss.

A helping hand at CAT

This new find brings the total number of bat species recorded at CAT in recent years to six, including both rare (greater and lesser horseshoes) and more common species (common and soprano pipistrelle, Daubenton's and brown long-eared bats).

CAT's mosaic of sensitively managed habitats, combined with careful management of buildings and outhouses, creates the perfect space for bats and other wildlife to thrive. Not only does this help the wildlife where we are, but it also allows us to provide training in the management of woodlands, hedgerows, meadows, water systems and other habitats, and in low impact wildlife-friendly building – essential knowledge and skills at a time when conditions are challenging for so many species.

We consider it an absolute privilege to share our buildings and other habitats with bats and hope that they'll make their home with us for many generations to come. 🦇

About the author

Dulcie joined the CAT woodland team as Natural Resource and Volunteer Officer in August 2020. She spent the first few months of her role setting up camera traps and footprint tunnels in preparation for CAT's hosting of BBC Autumnwatch and Winterwatch.

She has a BA (Hons) in Marine and Natural History Photography, a course that put heavy emphasis on environmental subjects and concerns.



Greater and lesser horseshoe bats photographed by Anthony Hodges during a routine survey at CAT – note the size difference! The picture is grainy as it was taken without a flash so as not to disturb their roosting.

What you can do – go batty!

A few simple steps can make gardens or outdoor spaces more attractive for bats. Regardless of whether they are in urban or rural areas, if given the opportunity bats can and do use gardens – and never has the importance of gardens been more apparent than now.

1. Plant for night time pollinators:

Plant flowers that release their scent in the evening to draw in bats looking for an insect meal. Native wildflower species such as red campion, cornflower, foxglove and yarrow will attract late night pollinators. It is best to grow a wide range throughout the year, as different plants attract different types of insect.

2. Create a roost site: Hanging a bat box in a suitable position can help local populations. Easy to make but also widely available to buy, there are a range of boxes that are species-specific.

3. Invite in insects: You can create microhabitats by making log or leaf piles or maintaining a compost heap. Even the smallest of ponds can be a huge boost to the availability of food and will have bats swooping with joy.

4. Switch off the lights: Making an effort to reduce light pollution is another helping hand for our bats. Artificial light, such as garden security lighting or decorative lighting on homes and trees, can have a detrimental effect by affecting the time when bats roost and come out to hunt.

5. Go chemical-free: Above all, abandon the pesticides. Bats are masters of nocturnal pest control and can easily eat thousands of insects every night – think of all those pesky mosquitoes and midges!

By creating a bat friendly space you could be rewarded with the magical sight of these stunning creatures hunting in the skies across your garden. Look out for them around sunset and sunrise from March to October.

In otter news: building a new home at CAT



Swimming in the River Dyfi, near CAT (jchphoto.co.uk).

Once nearly extinct in the UK, otters have made a remarkable comeback. **Dulcie Fairweather** explores a conservation success story and looks at how we are helping this charismatic carnivore to thrive at CAT.

Latest statistics paint a grim picture of the natural world, with thousands of species in relentless decline and the UK failing to reach 17 out of 20 UN biodiversity targets agreed on 11 years ago.

According to recent analysis by the RSPB, the verdict is even worse than feared. On six of the 20 targets the UK has actually gone backwards; a shocking finding, especially as biodiversity loss is as much of a threat to humanity as the climate crisis.

While it is incredibly vital to highlight the urgent concerns and challenges facing UK wildlife, it's also important that we celebrate the more positive stories – those that show how we can help nature back from the brink.

Magnificent mustelids

Renowned for its agility and playful nature, the otter is one of our most notable conservation success stories.

Weighing in at around 6-8kg, it is the second largest member of the mustelid family found in Britain, a family that also includes badgers, weasels, stoats, pine martens, polecats and mink.

This playful but secretive mammal is one of our top predators and is well adapted to life both on water and on land.

Their webbed feet and long, rudder-like tail propels them through the water at an

impressive one metre per second.

They utilise a wide range of aquatic habitats from small ditches, moorland streams, lakes and ponds to large rivers, estuaries and coasts. Consisting of roughly 80% fish, their diet particularly favours eels and salmonids but they will diversify and eat amphibians, crustaceans and waterbirds if food supply is scarce.

Troubled waters

Once widespread in Europe, otter populations suffered a severe drop between the 1950s and 1970s. The combined effects of persecution, habitat loss and aquatic pollution caused a radical reduction in their numbers and range.

The species faced intensive persecution for fishery protection and sport throughout the 18th and 19th centuries, with packs of hounds specifically bred to pursue the scent of the otter.

From 1958 to 1963 the 11 otter hunts in England and Wales, according to their own records, killed 1,065 otters between them. Ironically, the dwindling population was first noticed by the otter hunts in the south-west of England.

Habitat destruction, particularly the drainage of wet areas, ravaged much of the otter's riverside environment.

Fishing, boating and urban developments like new roads and houses disturbed the shy otter in previously quiet waterways.

However, the introduction of agricultural chemicals (organochlorine pesticides) has been identified as having the greatest impact on the devastating crash in numbers. Changes in traditional farming methods led to these pesticides being used in sheep dips and seed dressings, subsequently leaching into waterways and polluting the otter's ecosystem. As top predator of the aquatic food chain, otters are highly susceptible to the bioaccumulation of fat-soluble pesticides.

The toxicity of these pesticides fatally poisoned the animals, contaminating their prey, or significantly affected their breeding and immunity to disease. Further aquatic pollution from fertilisers, farm slurry, sewage and herbicides exacerbated the problem.

The first national otter survey, carried out between 1977 and 1979, detected the presence of otters in just over 5 per cent of the 2,940 sites surveyed; all the sites were known to have held the animals previously. The species had become largely extinct from the rivers of most of central and southern England.

In 1981, the otter was declared so rare that it was granted legal protection, with hunting being banned. This new



Otters are now found in every British county (Dulcie Fairweather).

legislation sought to prohibit persecution, improve the water quality of rivers and introduce a programme of otter releases to help numbers to recover.

Turning the tide

It has been a long and perilous journey, but otters have finally managed to swim back from the brink of extinction. The current population in Britain is estimated to be around 10,300 (Scotland, 7,950; England, 1,600; Wales, 750).

Otters are considered an important flagship species of healthy freshwater ecosystems; their presence indicates the condition of the wider environment and is a hopeful sign of improving watershed conditions. They greatly depend on clean rivers with a plentiful, varied supply of food and ample bank-side vegetation offering secluded sites for their holts. As their territories can extend to up to 25 miles of river, they need to be able to move frequently within and between patches of good habitat to feed, breed and rest.

Their future certainly looks a lot brighter now; these iconic animals can now be found in every British county, although breeding activity is still low in many areas.

Worryingly, data published last year revealed that all English rivers failed to meet quality tests. The figures suggest that pollution from sewage discharge, chemicals and agriculture is having a huge impact on river quality – drawing alarming parallels to the conditions that endangered otters over four decades ago.

The species' return from the brink of extinction means they are more valued than ever but, with anglers increasingly vocal about rising otter populations, there must be discussions on how to prevent

conflict as the species expands its range and numbers.

Wh'otter you looking at?

You have more chance of seeing an otter today in the UK than at any time since records began, yet their elusive nature still makes them a difficult spot. Seeing the signs of otters is far easier than seeing the animals themselves. So, what should you be looking for?

Along riverbanks and waterways, keep your eyes peeled for five-toed footprints which are about 6-7cm long. Otters have blunt, short nails, which frequently leave no mark. Their droppings, or 'spraints' can be found in prominent places and they act as 'scented messages', helping them to find mates and defend territories.

A fresh spraint is black and moist with a coating of an oily looking slime. In time the dark colour fades, until the spraint goes grey, and then white. Spraints

contain visible fish scales or bones, with the occasional feather, frog's leg bone or fish egg. They have a pleasant smell, often said to be reminiscent of jasmine tea (not the worse animal poo to stop and sniff – by far!).

Holt! Who goes there?

Here at CAT, we have recently finished building an artificial otter holt as a wildlife enhancement measure to help nature thrive – as featured on this year's BBC Winterwatch.

We know that there has been activity along the river and, by constructing this holt, our goal is to provide safe refuge for otters breeding in this beautiful stretch of waterway.

Alongside our sympathetic management of riverine and aquatic habitats, it is our hope that this artificial holt will be soon made into a home by one of our most charismatic mammals.

An artificial holt can be made in a variety of shapes and styles, using a range of materials. We've constructed ours to be durable as the river levels can fluctuate rapidly and dramatically (a one-way escape hatch built into the top of the holt allows otters to flee flooding without allowing access to predators). We're pleased to say that it held its own against the torrents of the recent Storm Christoph.

Made using mostly reclaimed building materials and thinnings from the CAT woodlands, and built by CAT staff and volunteers with a helping hand from Winterwatch presenter Iolo Williams, we hope it will provide a safe haven for otters for generations to come.

It is an exciting addition to the CAT site, and we have everything crossed that we'll see pups playing on the riverbank before too long! 🐾



Iolo Williams helping build the CAT holt.

Working with wildlife for people, plate and planet

Gardening journalist, editor and trainer, **Kim Stoddart**, explains the many benefits of improving and nourishing biodiversity in your garden, allotment or community green space.



Kim in her wildlife friendly garden.

As many people discovered during the initial lockdown last March, time spent in the natural world soothes, mesmerises and makes you feel incredibly good. In a world currently filled with extreme disconnect and anxiety, the more we can find connection and wonder in the beauty of nature, the better we will feel overall.

There's no doubt that a veg patch that is truly alive (rather than meticulously controlled) can also offer many benefits for wellbeing, with the sight and sounds of nature taking your gardening to a whole new level of connection and enjoyment.

Tuning in to the sight of a butterfly fluttering on the wind, a bee busy bumbling from flower to flower, or the excitable chatter as garden birds celebrate a burst of sunshine, makes you feel good to be alive. It takes you outside of your head and away from concerns around the state of the world, offering simple yet potent and meaningful pleasure.

Building resilience

Building resilience in our growing efforts is increasingly important with climate-change-induced greater extremes of weather ahead, but the good news is that nature holds so many of the answers. By stepping back from the idea that our gardens should be primed and polished and instead allowing wildlife and biodiversity in, we can create a truly alive, productive, lower maintenance, resilient growing area for the future to the benefit of all.

The truth of the matter is that many of our current so-called 'gold standard' gardening methods are no longer fit for purpose. They focus around keeping nature under control, and treat outdoor spaces almost like another clinically clean room of the house. This in turn makes them high maintenance and vulnerable to the increasingly volatile elements. Yet many of these methods are based on Victorian country house principles and so are actually relatively recent interventions.



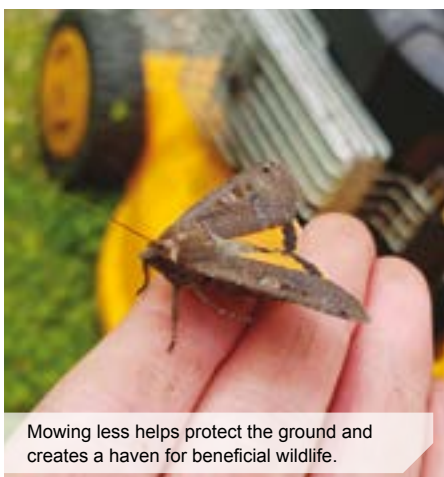


If we look back to the medieval peasant gardens of yore, they took a much more nature-friendly approach. They allowed mixed and perennial planting and self-seeding among plants, including weeds, which were often edible and were encouraged to attract pollinators and predators. Seed saving was commonplace, and overall these much lower maintenance spaces were rich with wildlife for natural pest control and productive for the table, because workers were reliant on the food they produced.

So there's nothing new about a more sustainable approach to gardening, where wildlife works in harmony with and to the benefit of produce-growing efforts.

Creating a biodiverse garden

Here are a few tips on how to encourage wildlife into your garden to create a productive outside space that is truly, gloriously biodiverse and which feeds the soul as much as the stomach.



1. Don't lawnmower so much

By letting your grass grow longer (even in small patches) and allowing dandelions and wildflowers to move in, you will be creating a valuable source of food (nectar) for pollinators like bees early in the season. Longer grass is also more

resilient against extremes of weather and can provide an attractive habitat for many insects and amphibians.

I allow the grass to grow very long (in fact I leave it almost entirely alone) at the back of my gardens around my soft fruit bushes. To enable me to access the plants easily I mow a pathway down the centre of this area and just keep this maintained. Every time I have considered widening the mowed path, I have spotted moths, butterflies, newts or frogs, which have stopped me in my tracks and reminded me how valuable this habitat is for them, so I leave well alone.

2. Wild about weeds

As well as leaving areas of my gardens to get overgrown to help nurture and attract wildlife, I also allow non-invasive weeds to move onto the veg patch, especially over winter. They provide protection for the soil against the risk of nutrient leach caused by heavy rain, and can help bind the loam together and improve its structure. Also some weeds are edible (fat hen, dandelion, nettle, winter cress, garlic mustard, for example), and can help improve the quality of soil (e.g. nitrogen-fixing dock leaf or foxglove).

3. Pick of the weeds


Variety is the spice of life and the bedrock of encouraging a natural balance of wildlife. However, if you are to allow any weed to grow then let it be a patch of stinging nettles as they help to attract and harbour ladybirds and lacewings, both of which are great for natural pest control. Ladybird larvae can Hoover up thousands of aphids and greenfly during their lifetime so they are a delightful and valuable ally to have in the garden. Although not a weed, bronze fennel is also a good plant for attracting these incredibly useful predators. Leave it to overwinter on the veg patch where it will dutifully grow back in the spring.

4. Other ways to encourage wildlife

Every creature has their place in the eat-and-be-eaten world of nature – even slugs, which are food for predators. It's much harder for one so-called pest to get out of control and wreak havoc when you have a biodiversity-rich ecosystem alive and kicking in your outside space. Birds, frogs, newts, ground beetles, wasps, spiders and many more besides all play a valuable role and should be encouraged with gusto. They are a delight to behold in the process.

There are many other ways to encourage these beneficial creatures; letting go and not meticulously controlling your garden is key. However the addition of a small pond (even an old wash basin) will provide a valuable water source for frogs, birds, newts, hedgehogs, toads and butterflies alike. Just place large stones in your pond (and around the outside) to aid access and provide an attractive shelter.



A leaf litter pile is useful and an open chamber compost heap might even attract a grass snake if you are lucky. Allowing plants to die down naturally in your garden, leaving seed heads over winter and letting some dead wood remain in situ on trees also provides enticing shelters for a range of wildlife. 

About the author

Kim Stoddart is the author of The Climate Change Garden book, available via the CAT Ecostore. She is a national gardening journalist, editor of The Organic Way magazine and trainer on all things climate change savvy grow your own, resilience and biodiversity.

Find out more

You can watch a recording of Kim's recent CAT webinar on this topic on our website, where you'll also find other past webinars and details of upcoming online events: www.cat.org.uk/past-webinars

Fledgling farmers – strengthening local food supplies

The past year has highlighted the fragility of our food systems and the need to build greater resilience into supply chains. **Katie Hastings** of the Pathways to Farming project gives us a flavour of how local growers in and around CAT's home town of Machynlleth have responded to the challenge.

When accepting our new intake of Pathways to Farming trainees over a year ago, we thought 2020 would be an easy year. Having already run the new training programme in commercial food production in 2019, we were ready to repeat the same thing again for new trainees wanting to progress to growing food for our wider community.

"We'll just tweak a few things," we said. "This year will run a lot more smoothly." We didn't realise we were in the calm before the storm.

Our winter classroom sessions went largely to plan. Our 10 new trainees diligently wrote business plans and planned crops to fill their training plots. We spoke about the local markets we had carefully researched for our growers to sell their produce into. We name dropped the businesses we were already working with, confident that they had a demand for the locally grown salads and fresh veg our trainees were going to provide.

And then the pandemic came, just as the spring seed sowing was kicking off.

A difficult spring

My first fear was that Pathways to Farming was going to grind to a halt as the country went into lockdown. It didn't take long to realise that the opposite was going to be true. Food production is essential work. The Welsh Government released a list of those who could still travel, and of course food producers were on it. We had always known how important it would be to grow food for local consumption, and here was the moment when we might actually need to rely on that food.

We suddenly had a fresh single-minded focus. If you are going to have a crisis in the food supply chain, there is no better time for that to happen than early spring. Taking advantage of this one small mercy, we exploded into seed sowing.

Overnight, our trainees at CAT took on double the growing space they had planned for.

As the CAT visitor centre closed and staff were furloughed, our trainees stepped up to take on tending the fields. Leek seedlings were



Trainee Pete Stewart with freshly picked produce.

passed from veteran gardeners' hands to ours. In the absence of proper planning time, simple hand-drawn sketches were emailed around late at night with new crop rotations. Clubbing together, seed potatoes were frantically ordered from nationally dwindling stocks. Evening zoom calls took place with trainees asking streams of questions to our tutor as they tried to adjust to scaling up.

In Newtown, our trainees had been gearing up to run the Veg2Table box scheme for its second year, supplying local households with fresh produce. As the pandemic set in and food distribution systems were being reordered all around them, their focus sharpened. Selling locally grown vegetables direct to local people remains one of the best models for getting food from plot to plate quickly. The pandemic only served to highlight this further. Working closely with our sister organisation Cultivate, our trainees pushed to get more crops in the ground. As Cultivate grappled to open a local food shop on the high street amidst a changing food landscape, Veg2Table was able to pack and distribute their veg boxes from this shop and straight into the hands of local people.

Organising local support

With the pandemic came important accelerations to long needed support for local food. In Machynlleth, a new community group Planna Fwyd sprang into action, organising support for local people to grow.

Several new farmers stepped forward with land, wanting to produce for the community. With no formal training, they burst into action preparing new fields for kale production, planting hundreds of kilos of potatoes and conjuring up entirely new market garden spaces from woodchip and manure.

We hosted a 'field scale support group' which offered these new vegetable farmers a space to share challenges and ask questions of our tutor as they pushed on to working out how to get this produce to local mouths.

Planna Fwyd's creation of a Dyfi Land Army provided additional support and gave local furloughed people a safe way to volunteer on local farms at the height of the spring rush. People willingly signed up to barrow soil, plant squash and weed. They arrived upbeat and ready to help, and they provided much needed support to local vegetable farms, as well as helping us to prepare more land on the CAT field.

Food for the community

Growing food is only halfway to the summit for commercial vegetable growers. Once you have produced something tasty



Ruth Kernohan – one of the trainees working in the CAT fields.

and nutritious, it needs to be packaged, delivered and sold. Fresh veg is highly perishable and priced cripplingly low. Our Pathways to Farming training is designed to support trainees in writing business plans to find niche markets, special business relationships and value-added processing techniques. But as 2020 unfurled, the best laid plans of our trainees were pretty much in tatters as restaurants closed, cafes cut costs, more people moved into poverty and those with the space to do so started growing their own food.

Unstoppable, our trainees packaged food and sold it through local grocery store Siop Blodyn Tatws and the Fresh and Local stall in Machynlleth market. They no longer focused on profitable crops but on those that were needed. Putting solidarity before earning a living themselves, they gave high quality vegetables to 'Solidarity Veg Boxes' organised for distribution to local people unable to afford fresh food (organised by Planna Fwyd and the Machynlleth Solidarity Fund). As well as developing market gardens close to the heart of Machynlleth, two of our 2019 trainees partnered with local greengrocer Mair Tomos to set up a market garden on her family hill farm. Setting up brand new growing beds and a polytunnel, Tyfu Llwyi market garden is providing salads, fresh herbs, tomatoes and other crops for Mair's Siop Blodyn Tatws on the Machynlleth high street.

Meanwhile in Newtown, the Veg2Table box scheme supplied 20 households with local veg every week through the Cultivate shop, extending the box scheme throughout the winter to meet demand for fresh, local produce.

Launching an online distribution hub

Building on our consultation and plans from 2019, we launched the Bwyd Dyfi Hub to help with distribution. One of the key barriers to businesses buying local produce is lack of easy communication channels with growers who are often out in the field. Using Open Food Network software, we created an online hub for multiple producers to list their fresh produce for businesses to order in one place.

With many hospitality businesses in Machynlleth operating at reduced capacity, we immediately expanded our delivery bubble to cover a wider area. Not only did this fill an immediate gap for produce needing an outlet, it also strengthened our relationship with allies geographically further afield. These relationships are already sowing the seeds for a new expanded food hub to run next year across the Dyfi Biosphere, taking more produce from market gardens to residential centres like Aberystwyth.

Building resilience

Finally able to take a breath, I can't quite do justice to what has been achieved this year by our fledgling farmers. Unflinching in the face of so much change, our trainees and community growers have exemplified the attitude that I find again and again in local food producers: determination, resilience and fierce passion for growing good food for people to eat.

If there is anything we can take away from 2020 it is that we cannot rely on our food being imported from elsewhere and grown by people with whom we have no connection. We need a resilient local food system that supports local growers. We need people in our community to buy local food consistently and at a price which better reflects the costs of sustainable production. We need distribution systems that address food justice, making good food accessible to all. We need to show up for our growers, in the fields, with our purses and on our plates. [CS](#)

About the author

Katie Hastings is joint Project Coordinator for Pathways to Farming and co-founder of Mach Maethlon. She has been growing vegetables for more than 10 years, including six months volunteering in the CAT gardens. katie@machmaethlon.org

Pathways to Farming is run by Mach Maethlon in partnership with CAT and Cultivate, and is funded by Arwain Rural Development Fund, part of the European Social Fund. For more information, see www.machmaethlon.org

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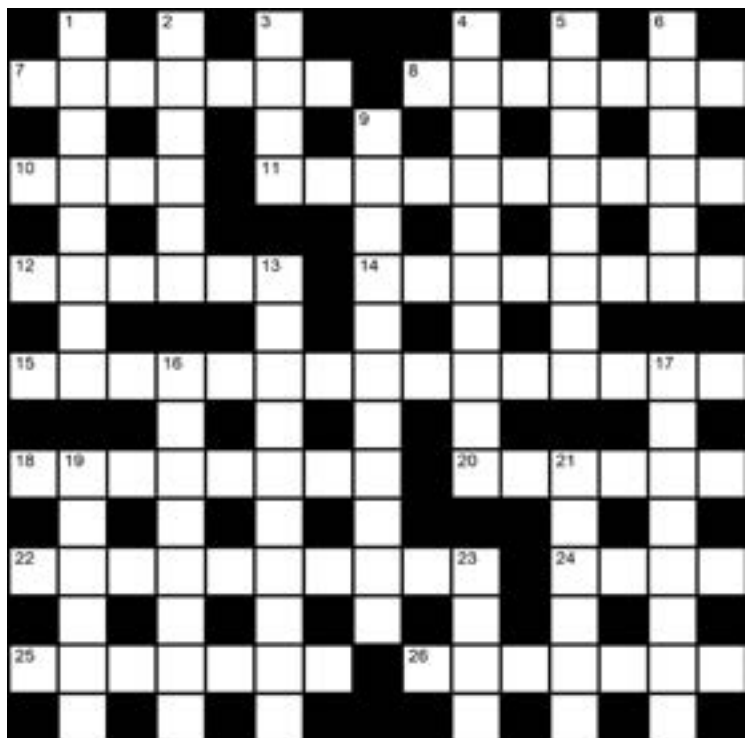


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Cryptic crossword by Brominicks

<http://www.brominicks.wordpress.com>



Ten clues lead to solutions that include a theme word, which is ignored in their wordplay.

Across

- 7 Cheap board – a great deal! (3,4)
- 8 Run after dog, one with a black face? (7)
- 10 City midway between Lagos and London? (4)
- 11 Frenchman breaks up earth around single shrub (10)
- 12 Lippy character? (4-2)
- 14 They require helmets to go up against Surrey's foremost fast bowlers (8)
- 15 Renowned death sentence, subsequently proved to be wrong? (6,4,5)
- 18 Close leading hospital department with 1-2000 in (8)
- 20 Be in control of non-stop train (6)
- 22 Mushroom advocate, surfaces green-gilled (10)
- 24 Bird in flight, not weightless (4)
- 25 One keen on getting rid of rubbish footballer (7)
- 26 Bound to elect democratic leaders (7)

- 3 Tight fitting batteries put in the wrong way round (4)
- 4 Criminal located outside supermarket, finally caught (10)
- 5 One's other half's a singer that covers Queen, for example (5,3)
- 6 Wee wee (6)
- 9 Getting the better of gout's complicated (11)
- 13 Mushy peas (small) included in bird order (10)
- 16 Impound ecstasy after ransacking this place (5,3)
- 17 Small diameter fronds on this plant (8)
- 19 Flash haircut (6)
- 21 Overthrow and waste time for a second (6)
- 23 News article about American relative (4)

Clean Slate 118 Solution



To enter:

Name: _____

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The first correct entry pulled from a hat wins a £20 voucher for the CAT EcoStore – store.cat.org.uk.

Please send your completed crossword entry by **30 April 2021** to *Clean Slate* Crossword, Centre for Alternative Technology, Machynlleth, Powys, SY20 9AZ.

Solution will be published in the next issue of *Clean Slate*.

118 winner: **Annie Dal'Santo, Glasgow.**

Down

- 1 Returning from one place to another African country (8)
- 2 Wartime poet born to England (6)

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Let your passion live on at CAT by leaving a gift in your will



Tanya Hawkes, Legacy Fundraiser

Every week I hear from people whose lives were changed by CAT. Usually these stories are told by the families of CAT members and supporters who have sadly passed away. But despite the grief and loss, the conversations I hear are so often hopeful and inspiring. They are memories of dedicated and thoughtful people, who lived lives according to their values and passions. It's an honour to hear these stories.

I recently heard from a person who visited CAT as a child and remembers her father making solar panels after being inspired by the exhibits at CAT. Another person described using our compost toilet, fascinated that there was no flush.

Every time I see school pupils at CAT, staying in our eco cabins and learning how the photovoltaic panels work or making earth bricks with one of CAT's building teams, I realise this is an experience that might spark a passion for the rest of their lives. Hopefully we'll be hosting these inspiring visits again before too long.

The gifts that people leave us in their wills are so helpful for CAT to plan our work, knowing we will be secure year after year, decade after decade, to keep

exploring and sharing solutions to complex environmental problems with hope and optimism. Sometimes the gifts are a fixed sum of money. Sometimes they are a portion of someone's estate. Occasionally they are a specific gift of property. However they are gifted, the bequest becomes part of CAT's day-to-day work, ensuring we can keep delivering vital knowledge and skills to thousands of people.


But these gifts in wills also have a deeper effect. CAT's work is built on the history of hundreds of thousands of people. People who share a common goal of a better, fairer, environmentally regenerated society. Some have learned at CAT because of a passion for renewable energy, using our demonstration site to discover how a wind turbine works or where best to situate solar panels. Others were inspired by CAT's organic gardens, compost science or reed bed filtered sewage systems. Thousands have learned low carbon building techniques from the rammed earth walls of CAT's lecture theatre or the green oak structures of the cliff railway.

Whatever people's reasons for being inspired by CAT, we can turn initial inspiration into knowledge and skills

that help to change society at every level, including local, regional and national policies. The ripple effect of CAT's work is apparent all over the UK and beyond as our visitors, schools groups, students and volunteers become changemakers, in the building industry, energy, food and agriculture, biodiversity, transport, politics and economics. All have a united vision that no single aspect of sustainability is the solution, recognising the need for a complex combination of solutions that connect across society.

We love to honour and recognise the many people who've worked with us and helped make CAT's work possible. Their names are on plaques above doors, on benches and slate walls: a reminder that CAT is more than a site or a place to visit. It's a community of people of the past, present and future, collectively building and growing skills and knowledge together for the benefit of societies near and far.

We are always grateful to the people who support this work.

If you would like to leave a gift in your will to CAT, please feel free to email me at tanya.hawkes@cat.org.uk to arrange to chat it over. 



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