

Climate Stories

We all have a story to tell about climate change

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Foreword

Professor Peter Stott

*C*limate Stories is an exploration. Its genesis lay in Weather, Art and Music – or WAM for short – the initiative that Pierrette and I founded in 2012 with Prof Paul Hardaker, Chief Executive for the Institute of Physics. With WAM, we explored our relationship with weather and climate through public events including song recitals, theatre productions, talks and festivals. Then, in mid-2017, we saw an opportunity to take our exploration into arts and science collaboration a step further, thanks to a funding call put out by the Natural Environment Research Council (NERC) under their Engaging Environments Programme.

We wanted to bring together a group of climate scientists, artists and community groups to create new stories about probably the most pressing issue of our age, climate change. We knew a wonderful group of arts practitioners who we could work with to help develop the concept and deliver the project: Fiona Lovell (printmaker), Dr Evelyn O'Malley (lecturer in drama), Rosie Eade (climate scientist and singer/songwriter), Dan Plews (singer/songwriter) and Sally Flint (writer and poet). Prof Stewart Barr and Dr Ewan Woodley of the Geography Department at the University of Exeter, supported by Celia Robbins and Rebecca Pearce, would interview the participants and evaluate how the project had changed their thinking. Activities would be based in the Exeter region, home to a University with a superb research base in the environmental sciences, and the Met Office with its world-leading Hadley Centre for Climate Science and Services.

We wrote our proposal and submitted it to NERC. We hoped we would get a chance to put our ideas into action but we knew the call was going to be pretty competitive. Amazingly, NERC chose *Climate Stories* as one of a very few to support from a large field of entries. Now we had to make it happen!

First up, we put out a call for climate scientists to volunteer to take part. We were delighted to receive an enthusiastic response from twenty dedicated and talented researchers from the Met Office and University of Exeter whose employers were fully supportive of their participation. In early May, we met together for the first time at Dartington Hall in rural Devon. Over three extra-ordinary days under the expert guidance of our arts leads, the scientists explored song writing, theatre making, creative writing and print making in an inspirational setting of mediaeval halls and landscaped gardens. Then enriched and emboldened, our cohort of climate scientists set out on the next step of our *Climate Stories* adventure.

During the early heat-wave summer, we met with community groups from around Devon to explore what climate change means for them. We made theatre with young people. We spent the weekend in Dartmoor writing songs. Children ate ice creams in the sunny countryside and wrote poetry. Adults made animations using collagraphs with the Double Elephant print workshop and crafted new writing from the display cabinets at RAMM. And from it all Sally Flint collated a collection of some of the work that was produced both at Dartington Hall and in those subsequent community workshops.

This book can only hint at the creative process we went through, the conversations we had and the discoveries we made. But it shows what a diverse bunch of responses we produced. And if at times, the material is rather sombre reflecting the challenging nature of climate change, these pages also reflect a hope that a better future can be forged, if confronted with creativity, passion and optimism.

This book's publication marks the end of our year's funding under NERC's engaging environment programme. But as one chapter finishes, another begins. The participants in *Climate Stories* have opened up a box of creative possibilities and they're not going to shut the lid. There is much more to do where art meets science.

We all have a story to tell about climate change. What's yours?

The Project - in Summary:

We are all storytellers. It's an innate need because it's the way we make sense of the world, and of ourselves. Telling a story is a process that can happen in so many ways: it can be a picture, a song, a story told to a friend over a beer, or a story written down on paper; it can be a dance, a tattoo, or a protest in front of a tree that is about to be cut down for no good reason except that a city council decides it's cheaper to get rid of it than to keep it. It can be a way of life - cherishing an organic garden grown for maximising biodiversity, making animations out of prints, bringing people together to try something new that you know is exciting and rejuvenating. Out of these myriad ways of telling stories come life, growth, new options, new ideas and a spring in your step that gets you out of bed in the morning. And crucially, telling a story is an act of generosity, with no expectation of return. We tell our story because we need to.

When Peter and I sat in our garden imagining what this project might be and might become, we were starting a new story we needed to tell, but we didn't know how it might end, because the ending didn't depend on us. It depended on the wonderful band of people who ultimately were going to be tasked with making this story work: our Arts Leads, our volunteer scientists, and all the members of our community who were going to take part in the workshops. Now we know how it ends: gloriously, with lots of stories told in print, picture, sound and movement, and even more importantly, with lots of new tales being devised and plotted by our intrepid band of scientific storytellers.

What a great story!

Pierrette Thomet - Climate Stories Co-ordinator

From the Arts Leads:

Creative Writing

Collaborations between poets, fiction writers and scientists have happened across history, but they are sporadic – their paths don't often cross. Therefore, *Climate Stories* offered a special and unique space to investigate. Dartington Hall provided an inspirational setting for us to experiment, expand, share and use our imaginations where there was a commonality discovered in methodologies. Writers love facts as launch-pads to develop narratives and to consider the world in different ways. So do scientists. Every piece of writing produced by the scientists in the writing workshops had a distinctive voice, message and authenticity. We linked past, present and future, focused on minutiae which, in turn, often reflected the global picture, and thought more about the power and sensibility of words. There was no doubt this was fuelled by the atmosphere of the room we used, with leaded windows, a creaking solid oak door and ticking grandmother clock that sounded like it was being choked every time it tried to chime! We took climate science topics and our Dartington experiences and ideas to the public workshops, at Royal Albert Memorial Museum in Exeter, with school children at Farms for City Children in deepest Devon, to a community group at Colebrooke village hall, and in an academic setting with researchers from other disciplines at the University of Exeter. Everyone taking part was bowled over by how much we achieved; a selection of the writing produced is showcased in this book. We agreed that creating and telling stories and writing poetry is a powerful, persuasive way to show how climate change affects us all.

Dr Sally Flint

Print Making

How do you get a group of people for whom patient observation and accurate recording is paramount, to adapt to a short one-off creative exploration of their work? Don't give them time to think too hard, provide one or two visual cues, a specific outcome objective and hope they run with it. Be prepared to step in with interpretive ideas should the need arise. It didn't.

From the very start there was such an explosion of energy as each and every one relished the challenge of creating something unique. Only the lightest touch was needed to guide participants towards certain tools, materials or with image sequencing. All the careful preparation and framing of the project had paid off and allowed for a fearless flourishing and sharing of ideas and experiences in just three days in a special setting.

Fiona Lovell

Performance

The sun shone for our three days at Dartington and so, for the drama workshops, each group of scientists chose to work in the gardens. They worked through a series of ‘invitations’ to think about their work in climate science in relation to the outdoor space. They made written notes, drew sketches and maps, took photographs and recorded sounds at different locations. One by one, each scientist brought us on her or his journey around the gardens, ‘performing’ the connections between their work or research and the material conditions of the place and weather we were in. And someone climbed a tree. Remembered traces of the scores for some of these passing climate performances are presented in this booklet.

Our subsequent community workshops took place with Doorstep Arts in Torbay and at Sidmouth Amateur Dramatic Society youth theatre group, where young performers devised responses to various climate science provocations. A further workshop took place at the Exeter Phoenix Centre, bringing scientists from the MET office together with actors from Sun & Moon Theatre Company, Exeter Little Theatre Company, Quirk Theatre, Restless Theatre to workshop possibilities for engaging with climate science in the theatre. Lastly, a quiet evening session took place outdoors at Organic Arts farm in Ide, where participants encountered climate science on a journey of the grounds and in movement weather-based exercises. And someone climbed a tree.

Performance passes, of course, and, the aspiration in the workshops was to encourage transient and ephemeral doings that opened up new possibilities for thinking differently, responding and acting creatively. As a form, performance

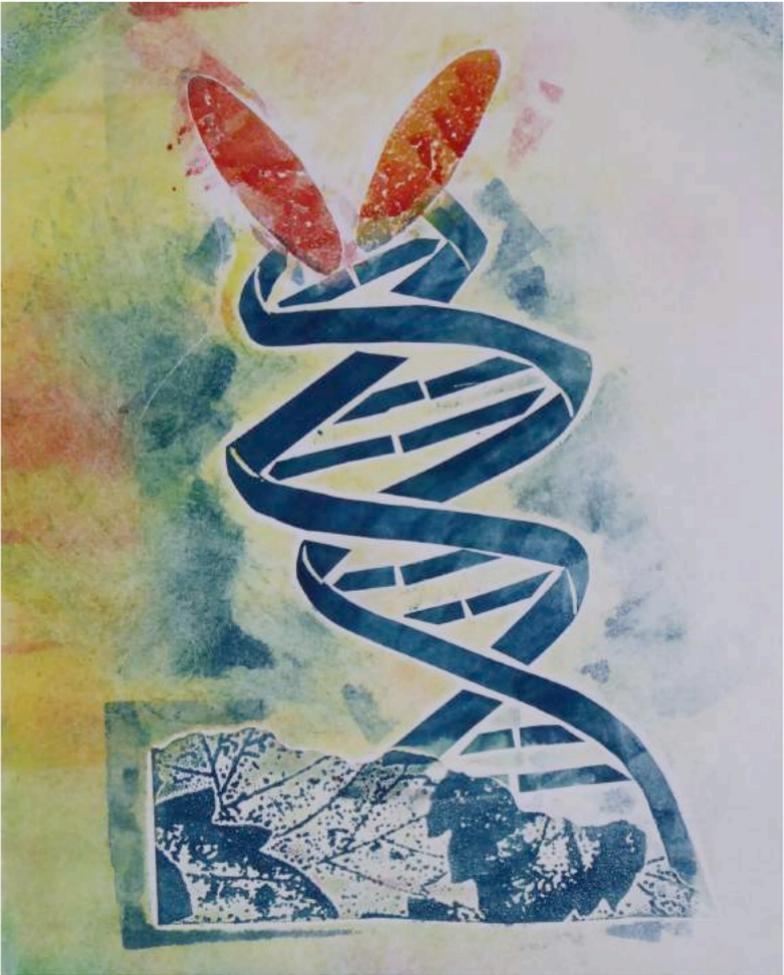
permits effort and experiment to disappear, encouraging safety in experimentation, knowing that sometimes it's enough that what matters, matters in the moment.

Dr Evelyn O'Malley

Song Writing

Writing with scientists and songwriters from Devon and beyond in the beautiful surroundings of Dartmoor is a memory with some wonderful contrasts. Balanced against the negative science narratives of how climate change will be detrimental to the natural world, are an array of inspiring and positive stories of how people are joining together to make a difference. In all of this, there is a stark conflict between how we engage with talk of global changes, compared to the emotion that is generated from an individual character's tale. Even the weather joined in, changing our mood from a hot summer's day writing under nearby trees, to a subtly darker spirit that came with torrential rain and composing in shadowy corners. I feel very lucky that life enables me to pursue my dual passions for mathematics and music, but I learned a great deal watching scientists and songwriters questioning each other and developing songs that combined real science messages with real people and real life.

Rosie Eade



'Pollen/DNA' Collagraph – Felicity Liggins

To the Future Historians

I open the book. The musty scent
of aged paper releases a landscape
of leaden skies. A horse shakes water
from its mane as farm labourers load
wagons, lift sheaves from the marshy,
sodden fields, salvage what they can.
A Victorian gentleman on a cliff edge
watches another storm roll-in. A boisterous
wind disturbs his thoughts. He turns
and addresses me directly. 'I have captured
all this rain. Every drop soaks these pages.
So Historian, what can you tell of the future?'

Mark McCarthy

** Based on George Symons's British Rainfall 1872, a contemporary
account of the wettest year on record for the UK.*

Petrichor

My little boy stands in the doorway,
barefoot in his yellow and red kurta,
watches rain thunder like theatre curtains,
clouds menace through the bright green leaves.
Coconut trees battered down by the gusts
as mud gushes through the now empty lane.
Droplets bounce high on the shiny courtyard,
like metal bells on dancing feet.
My little boy smiles under the rain.

Charline Marzin

Panoptic Panowa

It looks amazing from the vantage point
of the Sentinel –the longest uninterrupted
beach on Earth, an elongated yellow
flower touched by the Indian Ocean.
But what's this? I spot some disturbance
in the lush landscape. Zooming down,
newspaper in hand, it now makes sense
in a different way. The squalor,
stench and noise of the refugee camps,
nearly a million strong. Or weak.
People camp there, exposed
to monsoon rains and tropical cyclones.
The next landslides will wash away
homes and some of their lives.

Bernd Eggen

** Panowa is the indigenous word for Cox's Bazaar - it means 'yellow flower'*

One-E

Oh One-E, One-E,
Keen to get going.
You surprised us all,
You're starting early!
You've come from a trough,
Perhaps a tropical wave, too.
Coupled in with a Kelvin wave,
Leading to your wet & stormy birth.
Will you speak Spanish,
Habla Espanol?
The Mexican seas don't care One-E,
But you whip them into a frenzy.
Oh One-E, One-E,
You're getting a shiver,
Only a tropical depression,
Not even a fully-fledged storm.
Perhaps you should have waited
A little bit longer.
The early bird catches the worm
You thought.
But the waters were too cold,
The wind shear too strong, won't

Grow you into a Hurricane.

Bernd Eggen

** **Tropical Depression One-E** was one of the earliest formations of a tropical cyclone in the eastern Pacific basin. The storm failed to intensify after formation, and because of strong westerly winds degenerated into a remnant low by late 11 May 2018.*

Not the Town Musicians of Bremen – A Zoo Caught Up in Climate Change

A river roars past – lions pace. Tigers,
less fazed, have weathered bigger storms.
Fences disappear in the torrent.
A jaguar leaps into the Prüm,
catches a duck, swims back. How wet
they are, the kings and queens of the wild.
These animals are out of place –
not because the lions aren't in
a hot savannah, not because tigers
aren't prowling in a swamp forest,
not because a jaguar isn't stalking prey
in the Amazon. Here big cats shiver –
catch the smell of something darker
than a red-raw carcass, more pungent.
They huddle together, knowing Saskia,
the Asian Bear, will not return
to their zoo island. She swam beyond
the gate. Her black blood floats past.
Another animal 'bears' the brunt
of climate change. The downpour ends.

The Prüm subsides, fur dries,
keepers unload their guns,
put up more barriers in a heat-wave.

Bernd Eggen

** Inspired by true events: <http://www.bbc.co.uk/news/world-europe-44332699>*

The Town Musicians of Bremen is a well-loved German folk-tale, with a happy ending for the animals. In the events described in the poem, there is no happy ending for the captive animals, beleaguered by climate change. Five remain in captivity. The bear had a brief spell of freedom (whether escaped intentionally or swept out accidentally) and pays with its life.

What the water gave me

I dipped my toe
into the vast ocean
of my bathtub,
blissfully unaware,
floating in an endless sea.

The water gave me,
a tree holding up the sky,
volcanoes of concrete,
rainstorms written
in the growth lines
of clam shells.

My toes tickle a chain
of enormous change,
water damned
in its rush to the sea
by a small plastic plug.

Should I tug too hard,
all that I float in,
my small current world,
could be sucked away.

Sarah Baker, Mark McCarthy, Kim Squirrell

** inspired by Frida Kahlo's painting What the Water Gave Me.*



Water bug (Collagraph) - Kate Baker

Water in Transit

Dark, concrete, calculated
Precise, coded, on time
Cold, rapid, sanitised
Organised lines
Dissecting the landscape
Hidden from eyes
Organic, fresh, reflecting the light
Oozing, seeping, trickling
Musty and damp,
Endless pools, rocky riffles
Carving the landscape, evolving
Open, free, full of life

Kate Baker

Cassandra

Cassandra stands at the gates of the city

As waves lap against the walls.

Her warnings of warning fill the night

But her people ignore her calls.

Seas boil and rise, life struggles and dies,

The fortress begins to fall;

But the city sleeps through it all.

The city sleeps through it all.

Cassandra stands at the gates of the city

As waves wash around her knees.

Her heart's full of fears, her eyes fill with tears,

Her cries become desperate pleas

For life on the brink to stop, to think,

To wake up, to turn, to flee;

But the city falls into the sea.

The city falls into the sea.

Cassandra stands at the gates of tomorrow,

She tells of her people's mistake.

Walls crumbled and cracked but they didn't act,

And destruction lies in their wake.
Now we're on the brink – as we start to sink,
Will we be asleep or awake?
For the choice remains ours to make.
The choice remains ours to make.

Tim Gordon

** In Greek mythology, Cassandra was the King of Troy's daughter. Her warnings against letting the Trojan horse into the city were ignored, and a 'Cassandra call' now refers to a valid concern that is dismissed or disbelieved.*

Viewpoints

The girl with the beautiful eyes
Sits on the hill as the sun starts to rise.
Rays of red light explode through the skies
But the trees are all quiet; the birds have all died.
She listens to silence, her forest's demise,
And she cries.

The father with six mouths to feed
Has children whose stomachs are starting to bleed.
There are cracks in the ground; it's rain that he needs
For his crops that are shrunken and strangled by weeds.
He looks to the heavens – he drops to his knees,
And he pleads.

The woman who's losing her home
Wades through the waves and the washed-up seafoam.
She swims over reefs where fish used to roam,
But now they're all lifeless; grey monochrome.
The once-vibrant city has turned into stone.
She's alone.

The man sat on bus thirty-four
Looks out through the smog and the traffic-noise roar
As workers trudge in to do jobs they endure.
They once knew a world that could give so much more.
But blinkered by concrete and glass sliding doors,
They ignore.

Tim Gordon

Rhythms of the Reef

Yesterday, a crackle.
Buzz, click, chatter, snap,
Kaleidoscope of sound,
Raucous colour,
Symphony.
Today, an emptiness.
Hauntingly quiet,
Waves wash the rubble in
Grayscale echo.
Silence.
Tomorrow, revival.
Defiant chorus,
The song of survivors,
New life, new growth,
Crescendo.

Tim Gordon

** Between 2012 and 2016, the Northern Great Barrier Reef experienced the most severe episode of coral degradation in recorded history. As a result, the volume of its biological soundscape, created by a community of coral-dwelling invertebrates and fishes, dropped to a quarter of its previous level.*

Neuropteris

Snug in my hand
a dark print
of its former self.
Once it was bright,
a leafy shoot swaying
and speckled with rain
in the glow of a setting sun.

Sarah Baker

**Neuropteris - an extinct fern that lived 300 million years ago.*

Life

Gnarled roots
penetrate
beneath earth.
In old growth
blues, purples,
greens blossom
under a morning sun.

Sarah Baker

Tut-Tut

It was Carter who woke me on that fateful day,
Scooped me up and whisked me away,
Stored in a room, crammed with men in white coats
I lay there helpless prodded and poked.

Until they cradled me in another coffin
To be leered at by tourists all looking in.
With time, I learn to adjust to their gaze,
Their chatter helping me pass my days.

The Alexandria library has come and gone.
Thonis is lost to the waves beyond,
Nile silt stored behind the Aswan dam;
Replaced by fertiliser that can wash away.

World trade is centred round money and power
It transpires you can't eat either.
And while I may have walked with a cane
I did at least pay my men with grain.

Resources are finite, I don't understand
Would they discard things so freely if made by hand?

Medicine has moved on, the world is smaller
But emissions are making it even warmer.

It seems that most have access to schools,
But all I witness is an excess of fools.
I'm not sure if it's the heat or I'm getting angry.
Are we one calamity away from catastrophe?

Even now it's not too late to change, they say
But most seem to continue just the same anyway.
So before wars are fought for water and lush land
Please return me to the Valley sands.

Becks Parfitt

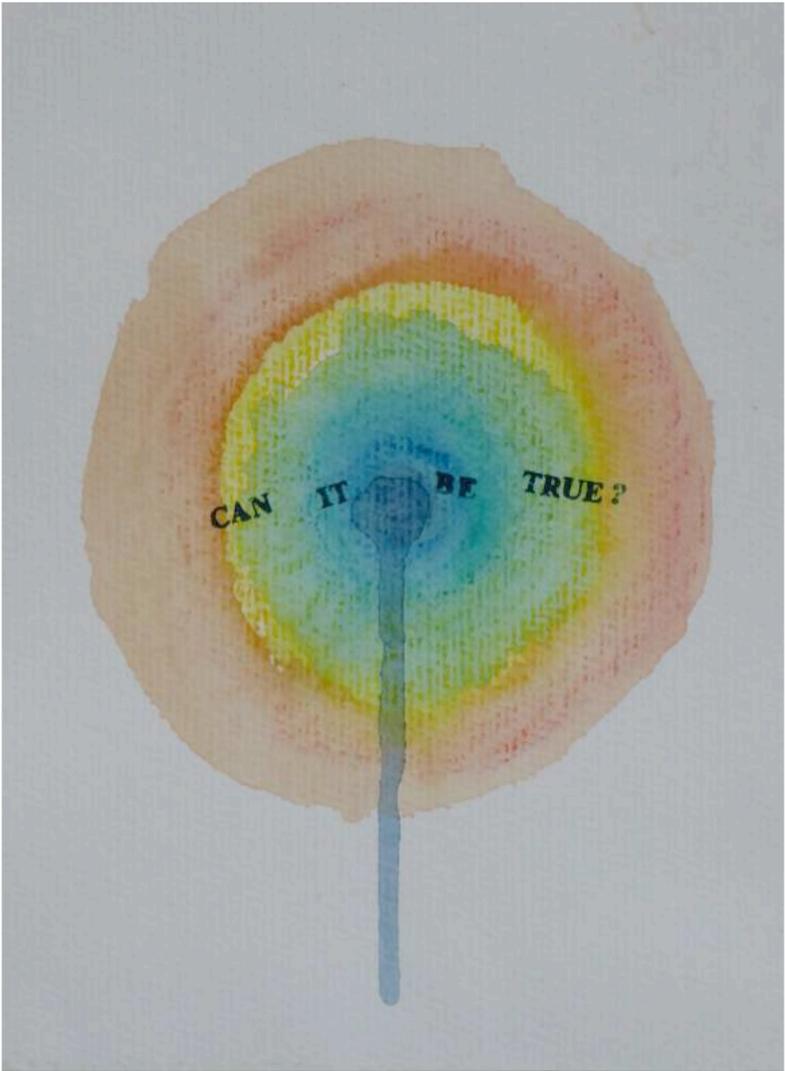
Nostalgia

It was the first primrose,
That small yellow face
Shyly emerging from the earth
Which signified to me
The advent of spring.

Not that it was I
Who noted this phenomenon,
The weekly letter from my mother
To abate the tedium of school
Never failed to contain this news
And awakened me, each year, to its arrival.

Then my eyes,
Which were shut,
Came open
And saw yellow everywhere.

Juliet Rawlins (Colebrooke Community Workshop)



'Can it be True' (Frozen rain drawing) – Fiona Lovell

Red Shawl

A rainbow of silky shawls.
I trace the threads
You so deftly wove.
Chickens peck the dust
And my toes.
We smile and the sun
Comes out.
Smiles, nods, no words
But we converse.
Your lovely land
Has warmed me,
Welcomed me.
I take the shawl
Put coins in your hand
And bury my nose
In the shawl's soft innocence.
A bear despairs
As it swims in search
Of food and rest.
Cold, blue harsh world
Made harsher

By my reach
For far off lands
Where I can buy
A beautiful shawl,
Savour your smile,
Reach across cultures and continents
To touch.

Mary Stephenson (Colebrooke Community Workshop)

Ghosts

Feather light, ready to swoop,
you'd fly like whispers
in the golden dusk.

First to hear the cuckoo
in Spring, seldom seen
but singing summer in.

Now no cuckoo calls
we hope in the flash of a pale leaf
imagine the coo of a wood pigeon.

Ghosts call across the meadows
of a simpler time. The high price
paid for convenience.

Mary Stephenson (Colebrooke Community Workshop)

Weather Woman

J. M. Smith

(Colebrooke Community Workshop)

Top billing in a one woman show, she waits each day behind the curtain until it's time. Bells and alarms, radio four, a blast of Debussy, breakfast TV and da-da, there she is. Already on stage and playing her part, she works harder than the Queen; not quite so discreet or overtly polite but never, ever off duty.

She'll have your fence down, your slates off and your patio broolly smashed and torn before you can say Michael Fish. Her fuzzy-headed, sleep needy audience miss part of the act, but worry her not; she has their full attention as soon as wakefulness occurs. This diva simply knows she's in command of their lives. Her earthling captives can leave their beds, their homes or the country, but they'll never miss a performance, or ever stop sharing reviews.

A mercurial lady, her style is unpredictable: tears in the rain, sunshiney smiles, storms in china tea cups, thunder bolts and lightening are altogether frightening as the wind blows through the willows, we have our heat-wave and summer breezes whisper her name. Musicals, horror, fantasy or scenes from a sporting life? Whatever the story, she'll devour the script, set the scene and dictate the end.

She fascinates us; let's agree – stalkers that we are, seeking, listening and taking notes. The alphabetical family of hurricanes, Storm Abigail and her untender siblings, the black sheep cousins we worry over, monitor, sigh and accommodate their potential by nailing things down. Even when she's resting we'll be watching our meteorological doyenne. A fly on the wall and an insider's view, we watch her and hope she'll spare us and all that we've worked for.

But oh, how we love her when her mind is at rest, when she parts the net curtains in the sky and gives us the sun. All is forgiven and if this show is to run and run, can we have tickets please, for tomorrow's matinee?

The Hottentot Figs Come Dancing

She's confined by frost.

An opaque wall
and a glass ceiling

stops the Hottentot
reaching her full potential.

The direct observable

outcome – we won't see
her anywhere else
but Britain's south west.

The world will never
be hers to dance in.

J.M.Smith (Colebrooke Community Workshop)

**After Sara Baartman and those for whom confinement has curbed potential.*

Mental Rain

Your House

Is underwater

Your mental health at risk

Obsession with the British weather

Accompanies flooding

Both – CBT and wait-and-see

You may have completely lost it

All.

J.M.Smith (Colebrooke Community Workshop)

Summer 2012

Jean Turner

(Colebrooke Community Workshop)

In late spring the daytime temperatures reached record highs. It felt as if the Universe was reassuring us that we had reached the right decision to leave the house our family had called home for the past twenty-six years. I could still hardly believe that we had finally done it, although it was the logical thing to do. Packing up proved to be a liberating experience, as downsizing to a house with half the number of rooms and a much smaller garden, meant that there was no possibility of keeping stuff we didn't need. The sun shone on us as we moved out boxes and furniture, alongside the contents of sheds and garages; it left our home echoing, due to all the empty space.

Although the sun continued to shine we were unable to move into our new home straight away due to delays further up the chain. We decided to book ourselves and our three dogs into a farm cottage on Dartmoor, all of our possessions sent into storage, aside from a few bagfuls of food and suitcase of clothes.

We woke late the first morning wondering where we were, the brightness and strength of the sun, streaming through the windows, reminiscent of holidays in Portugal, rather than England. During the next two blissful weeks every day was hot and sultry, under a cloudless, brilliant blue sky. We spent perfect hours, wandering through fields and over moors, cooling our bodies by paddling or swimming in rivers of clean, pure water. The weather broke at the start of June, on the day that we left the cottage, and at first it seemed a welcome relief as verges of parched wild flowers alongside the highway, were now lifting their heads up to greet the rain. Over the next few days the gardens and fields looked green and lush once again.

The trouble was the rain was relentless. Every day was the same. We woke to the sound of rain pounding onto the roofs and windows of our new home, and went to bed, with the same sound drumming in our ears. The dogs became reluctant to venture outside, their excitement at exploring pastures new, now forgotten. Walks were tiresome, trudging through muddy quagmires, followed by hours of washing and drying of dogs, floors and towels. The continual drone of the washing machine and tumble drier filled my head, coupled with the disturbing knowledge of the economic and environmental costs due to the amount of electricity being used.

Not being able to venture out into the garden, my main passion in spring and summer, impacted on my mental health, more than I could have thought possible. The sight of rotting vegetables and fruit was heartbreaking. The invasion of slugs and snails caused further decimation, as they finished off anything that hadn't been drowned or flattened into submission by the deluge.

I think I almost lost all semblance of hope for the future that summer. I listened to the meteorologists giving predictions for the days ahead and the rhetoric never altered, with long-term forecasts of heavy rain, dense cloudy skies, and the risk of further flooding. Everyone wanted to know why it was happening. The culprit was the jet stream being in the wrong place, or so we were told. But why wasn't it where it should be, that's what I wanted to know? And was I alone in caring about all those warnings of global warming, of Arctic Ice Caps melting? It was obvious all this flood water would fall again as rain, which would eventually submerge our world.

Or was it Mother Earth weeping as she watched people destroying the planet. I did a lot of weeping alongside her that so-called summer, as the dismal, damp, dark days, penetrated walls, seeped into my skin and dripped its way into my brain. I struggled to hold onto any feelings of joy, to even think logically,

and any creativity I may have possessed disappeared into the murky air.

And then one morning I smelt the kiss of autumn on the breeze. The winter that followed was harder than ever before. In the summer of 2012 I knew the seasons were changing. Now I appreciate every day the sun shines.

Glow Worm

Tiny phosphorescent gold orbed female phantoms
Flash and frolic
Dance and dip
Mid the dense aborescent frondescence.

Orange hummed street lamp
Penetrates
Eradiates
Its angular beam
To flood and extinguish
The real life subtlety to
Extinction.

Elizabeth Jane Tipping (Colebrooke Community Workshop)

Rainwater Harvesting

BOREHOLE PERCOLATION AND FILTRATION

Scooped into hands
Seeping through fingers
Creates drop-letting dazzle.

THE DEMAND AND SUPPLY RATIO

Sluice on to taut complexion
Splosh and splash
Torpedoing puddled pools.

LOW ENERGY STANDBY POWER

Popping bubbled drenched hair
Slithers soapily into
Voluminous effervescence.

GROUNDWATER RECHARGE

Strained squashed mutated feet
Unfold within warm lapped fluidity
Drip in naked innocence.

BS8515 COMPLAINT PUMP CONTROLLER

Lips find
Hand tips
Mouth opens to aqueous euphoria.

The Gold Watch

Elizabeth Jane Tipping

(Colebrooke Community Workshop)

The watch dangled in her hand. ‘Grandad would have wanted you to have this. It was presented to him by the 1st Emir of Bahrain. 1968. After he flew him to London. It was a BOAC VC10.’

The watch was heavy, orange gold with a delicate sketch of a Sheikh where the twelve should have been.

‘Grandad always looked so... handsome... wearing it for special occasions.’

With shaking, muddled fingers his Grandmother replaced it in the black Omega box, clapping it closed and pressing it into his hand.

*

It was now a ‘special occasion’. He needed the funding for *Predicting Flow rates at Tidal Energy Sites*. The bullet points had been fired, gaze and focus maintained, answers measured and sure. He pressed his clasped hands to control the nervous suspense, the watch clunking consciously onto the beech-effect table.

The pens clicked, ties tugged and loosened, chairs pushed back, papers collected. ‘Give us five minutes would you?’

He left the Board Room. The door shushed closed across the synthetic carpet. He took a drink from the blue bulged water container, which gulped and bubbled and gazed at the aquarium quiet and pointless. Tidal technology? Hadn’t Bahrain been the first Gulf State to discover crude oil? He shouldn’t be wearing this watch! Not here, having rational

arguments, targeting the non-pollution option with the Sheikh of Bahrain observing him from his wrist. He watched the glinting third hand shunt around the watch face. Could this be his Grandfather's talisman?

The handle of the Board Room door was wrenched down. The door gaped. 'Come in.' Pens were flung down, ties straightened, chairs shunted forward, papers ordered and edged, hitting the table defiantly.

'We think so. Yes. Give us the remit.'

The rhythm of time matches the ebb and flow of tides moving towards New Energy.

Living in the Country

Slurry pit smell
Crop spraying taste
A plane overhead
Cold rain the summer.

Here I am
Eating my meat.
Lets book a holiday
And follow the sun.

Buying my plastic
Latest gadgets
Filling dark corners
I excuse myself.

Pay Greenpeace a pittance
Then all is done
My conscience clear
My head in the sand.

A wake up call
Cancer op.
Why me? Why not?

It's all the 'rage' these days.

One in four

Complacency 'No'

I can fight

I can change.

I can use my legs

Let the car have a rest

Glorious veg from under the sun

Flowers for the bees.

Where do I shop?

How is it wrapped?

Where has it come from?

Do I really need it?

I have found new joy

Talking to others

The latest Buzz in town

Seeing the world through new eyes.

Join together. Make a difference.

Spread the word. Save ourselves.

Save our planet.

Caroline O'Sullivan (Colebrooke Community Workshop)

Ladybird

Ladybird fly home

Fire burning

Children playing

Too much fun

To see the danger

Earth is burning

Spoilt children

From rationed past

Must we leave our games?

Too much fun

Collecting toys,

gadgets, cars glitter

like lost magpies.

Will we destroy our home?

Chemical smells, smog taste

Or will we be enticed out

New adventures, way of life

Ladybird, where are you?

Caroline O'Sullivan (Colebrooke Community Workshop)

Green Man

Green Man mask dances on the wall
Joined by wind, lit by sun
Calling us to the lost forest
'Save yourselves before it is too late'



Caroline O'Sullivan (Colebrooke Community Workshop)

Country Walk

A bee touched me

I touched a bee

Such a rarity

Caroline O'Sullivan (Colebrooke Community Workshop)



'Bee' Collagraph – animation still – Ursula Rudd and Elena Kozłova

Climate Change Dances

They pass by each other in well practised dances,
the 'perfectly choreographed' man and wife;
avoiding collisions with do-se-do glances
in long rehearsed moves, learned through decades of life.
They waltz like wasps over fallen fruit,
in the warmth of the weakening sun,
no longer working in common pursuit
but concerned with the needs of just one;
in the apricot light of autumnal days
which follow the long summer hours,
he forges on in familiar ways,
she meanders; content in the showers
of leaves having turned golden, orange and red;
which she sees as beautiful, he deems as dead.

She seeks tranquil auras in magical places,
breathes in the flora in warm beams of light,
lies back and follows the sky-larking swallows,
swirling like flies in cerulean blue,
which reflect in still ponds, where electrical hues
of dragonfly wings clash in clay scented air;

parted by swifts as they splash into water,
sending up rainbows in prisms and orbs.
They fall, raising ripples which undulate out,
growing weak, and eventually hiding in banks;
but she remains there until navy blue blankets
with millions of stars sewn into their threads,
cover her shivering, naked shoulders,
and the moon lights a new way ahead.

He remains heedless, until it's too late;
like the owl which relentlessly quarters the landscape,
desperately seeking its prey;
he works, pushing forwards, silently striving,
maintaining the shape of each day after day,
each week after week, after month, after year, after year,
losing the meaning of why he is here;
so focused forwards, not noticing life,
until he no longer partners his wife
in the dances they practised, the moves they once shared;
their environment eddies, while habitats alter,
intentions diverted, his focuses falter,
with change in their climate, their world falls apart,
he loses his way, she loses heart.

Charmed by the sound of survivalist birdsong, sung
in the crystalline semblance of dawn;
pulled by the moon's new offers of dances
she senses her chances and quietly moves on.

Celia Claire (Colebrooke Community Workshop)

What's your canoe?

How wonderful to paddle,
travel by canoe
over the lapping ocean
where ice meets ripples
in the crisp clear air.
They make their own kayaks
from seal skins sewn with gut.
The wooden frame
rescued from shipwrecks of long ago.
Made with skill and love,
created by hands, not machines,
nothing imported, no plastic.
This self sufficiency we have lost.
Away from motorways and airports,
trains and buses,
only my legs and bicycle
can give that quiet peace.
The bonus is the scent of blossom,
song of birds, and buzz of bees.
Our world is changing
too fast,
too fast.

Ice melts, then permafrost,
Dark tundra absorbs the sun's rays,
buildings lean and roads subside.
The ancient methane floats up
To amplify the greenhouse heat.
What can we do?
Make sacrifices.
Be aware that need
Differs from greed.
Be imaginative,
creative,
adaptable
in how we change
the way we live.

Ella Young

*Inspired by the Inuit canoe at the Royal Albert Memorial Museum,
Exeter.*

Homo Sapiens

On the day when no planes flew
we lay an hour or two in the orchard,
looking up at the sky.
The same sky others watched for sunrise,
for when to hunt, or plant, for clouds.
A sky where gods were born
in the coming of too much rain, or too little.
And far off, the traffic's low growl,
the tractor's rattle across the fields.
What else was listened to under this sky?
The rumble of a quern stone,
the rasp of a rake, a shepherds call.
And further back the tick, tick,
of antler hammer knapping flint.
Hand and eye and body bent to the making.
In the ribbed percussion rings,
in the flake's sharp curves,
the roar of an engine, the melting of ice.

Kim Squirrell (RAMM workshop)

In a Vast Cabinet of Curiosities

a case of hawkmoths,
delta winged quiddities of trees,
lime, poplar, pine
and plants, convolvulus, oleander
and of Victorian gothic,
eyed and death's head.

They wear their scales like tartan,
clan patterns of arboreal shadow,
muted colours slow fading
under museum sub-light.

They're pinned, sealed from the dust of time
as reminders (ordered and labelled)
of how things used to be.

Graham Burchell (RAMM Workshop)

CLAM

For centuries they rested
on the ocean floor

textured and smoothed.

Uncovered for science,

photographed and drilled,
chemistry reveals

how our climate has changed,
held in the palm of my hand.

written by Dr Freya Garry



ThomHolmesPhotography
pictured: Sarah Holmes

Mistake

It seemed the air was shiver made.
A carbonated thrum of mantids,
bees, mosquitoes and flies.
Telegraph-wire rasp
high and low pitched;
train-speed trembling
between one insect and another;
between paper-draped armature
and gowns of acid blue.

We drove through
this wide green forest
once; stuttering diesel oil and smoke,
where the squealing shudder-cut
of rubber and blade
windscreen-wiped
a litter of wings
and pod-bodied grubs
into midden.

Corpse trails smeared,
ocherous upon the pane.
A pulp of spindle-wood legs and gossamer
flickering at 30 miles per hour.

It is green and humid still
but not so wide.
The steel and rubber
and crack-proof glass
drives clear through now,
from this quieter land.
Butterfly husks, empty as bones
lift in spectral mists
while far away, meteorologists
watch their ghosts,
radar charted as swarms.

Katina Laoutaris (RAMM workshop)

Totem

Ankle deep, and wading from the slow-rising sea,
we carried the wood and the weavings of home
upon our sharp-boned, rib-cat backs.

Inland to Wicken fen we went; on through the swill
of mud and marsh; stinking, fetid bog; the air
curdled with blow flies.

We dropped apologies in an archaeology of gifts:
wheat grain, spear-heads and hand-carved sprites
beseeching pity from apocalypse gods.
Gods with their trophy loaded museum cabinets of curiosity.

Katina Laoutaris (RAMM Workshop)

Like Me

Vases, mosaics – fractured
light on the sea, they spell
our names, our DNA,
as though to say:
'one day, you'll be like me.'

To see our past
in fragments, the cracked
rubble, ceramic pots,
an hour glass trickling,
soon to erupt in sulphur, ash,
fire that stings eyes.

Statues witness. Saints
pray, glassy-eyed,
in clothes stained with wine.
Wince at footprints,
Braille in the sand,
writing the language
only a human could understand.

Rocks, axes, placed perfectly.
Tapestries – folded origami
in a dollhouse made of glass.
The last template of a dinosaur,
hangs like a paper crane.

They'll think we were insane,
to have let this happen again.

Zebulun O' Regan (RAMM Workshop)

Sonar

like an old-fashioned radio
out of tune; the sound of the ocean.
If only it had lungs.

It pierces,
as though a song were a promise,
rhyming each and everything,
like pairs of oxygen.

Yet it can't
stop the ocean that breaks
like lines of poetry,
each time, harsher than the last.

Stop
sun-rays that rush down like harpoons,
form some sick idea of a halo.

The whales:
they can't run from the sun.
They're crying. Not singing, but dying,
wrapped in their last ounce of song.

Zebulun O'Regan (RAMM Workshop)

When I Was

When I was small the world seemed big.
I played with bottles and cans
made with other men's hands. Children
chucked them into a never-ending sea.

I grew up; the world started to shrink,
senses informed as rain turned
to drought. Other animals sank among
bottles and cans that choked oceans.

Now I'm big, the world seems small.
There's nowhere to run or hide
as skies and seas collapse.
I'm trapped as climate changes.

When I'm old I want to be free
of bottles and cans – I hope
this world can recover from
the excessiveness of me?

Miranda Addey, Amirah Alshebri, Tim Gordon, Victoria Omotoso

Through the Canopy

Around tall mountains
abundant life and warmth.

Humidity cradles me,
the cloud cloak created

by heat and topography.
Above trees are breathing,

transpiring. I cannot move while
the birds dance. I want to follow

their enchanting calls, up the steep
mountain walls – look down upon

the rainbow stripes beneath, draped
in cloud around the slopes. Knotted

stunted trees cling to the sides –
a gentle hum where birds reside.

Becks Parfitt

Saturated

Rain drips through tightly woven branches.
A green ocean throbs, seemingly infinite, full
of life. Sunlight percolates through the mesh
of canopy ceiling to the murky understorey.

Heat increases as decades pass.
Moisture-laden clouds, propelled

towards the desolate peak,
leave in their wake a thirst.

Kate Halladay

Home

Natalie Garrett

It started with small things. Envelopes, plastic bags. Those little plastic-coated wires that are so handy to have around. 'Just in case,' she said, 'just in case'.

The junk drawer filled and expanded, spreading to the drawer beneath. The dining table became covered in odds-and-ends, projects in progress. A toothbrush, a paintbrush, a hair brush. Junk mail piled in a corner, unassuming and cheerfully glossy. Magazines with enticing but as-yet-untried recipes stacked and stacked in the attic.

Walking around became a game: tiptoe, twist, turn, hop skip and jump. Carefully treading over heaps of clothes and tools and shoes and bags, tins and toys and all and sundry. Soon, you had to clear a chair of junk before you could sit in it. Sooner still, you were stuck with the junk in your lap after you'd sat.

The solution to cooking was to put chopping boards on top of the piles of junk, rebuild and rebuild. Even the microwave had to be emptied before you could use it. Things grew in the sink. The mulch pile in the fridge waited silently.

It wasn't long before anything organic started to rot. Mouldy aromas wafted up towards you if you knocked a pile. She found a skeleton of a bird in one of her wardrobes. 'Must have been brought in by the cat,' she said. She didn't have a cat.

Guests came to the house less and less. Those who persevered wore forced smiles and were entertained on the front patio, weather permitting. Soon, even this scarce space was overwhelmed with old furniture, piles of pots and tools, all sorts of decaying gardening paraphernalia. Even the garage and the

car itself were piled high with cabinets and such bargains, she told me, such bargains. Unmissable, in point of fact.

Even though the space she lived in was choking full of stuff with hardly any room for her, still she bought new things. She even bought a new kitchen, and lacking the space to put it, had it sent straight into storage. Several years later it patiently waits there for her, as yet unseen, paid for month-by-month.

She only has one house and has already over filled it. The space I grew up in, what once was my home, is now something else. I haven't stepped foot over the threshold in three years – she won't let me in. Nobody can clean the space except for her. She has to change her ways, but she has to admit she has a problem first.

Earth overshoot day comes earlier and earlier each year - the point at which our global demand exceeds our planet's ability to supply. My mother doesn't have enough resources to sustain herself in the years before she can draw her pension... unless she sells the house. She can't sell the house unless she clears it out.

Where would she clear all that stuff away to?

Landfill.

Breath-taking

Breath-taking blue view

Light shards sparkle in the spume

The fish suffocate

Natalie Garrett



Fish' Collagraph - Ayla Mostert

Grow

Stubby and small.
Not much to see
when plunged into the soil.
Whispering numbers over and over,
four times an hour.
Alone here, but one of many.
Ten thousand tell the story
of water and warmth.
Never meeting.
Never knowing
the others.
But the growers know
and their knowing grows.

Natalie Garrett

** GROW is an H2020 funded project which has set up a citizen observatory to help generate soil moisture data from thousands of small sensors sent out across Europe.*

Diversions

We're not here

To change your point of view.

We're not here

To debate, or argue.

You disagree?

Fine - you do you.

Stand aside.

We have work to do.

Natalie Garrett

POLAR POEMS – A Sequence

Culpability

The knife you live
on the edge
of is in my kitchen.
The thread you hang
by runs through my clothing.

Kinship

Flayed on a museum wall
like a cat-o-nine-tails
discarded throwing stones
mistaken for indigenous art.
The artefacts of survival
snag your past as well as mine.
Together we face
the watery abyss.
You are better prepared than I.
Tell me, my Inuit cousin
my Aleut kin,
how fares our Ainu family?

A polar haiku

Japanese Ainu,
Inuit and Aleut.
Circlet of peoples.

Hoku Eikara

(The ceremonial gifting of handmade clothing from a bride to her new husband).

My pen knife
becomes a boning blade,
drawn from its seal skin sheath,
by seal skin mittens.
Snow stinging steel
frosting the rim
of a fur trimmed parker.
My harnessed dog
steps from rippling tarmac
to a gleaming ice flow,
acquires chill-hardened paws,
joins a baying team
lashed together

by polar winds.
The fleece between my fingers
reaches my spindle
as birch- bark yarn,
appliquéd and embroidered
by bridal hands
to warm the legs
of an Arctic groom.

Lou Jenkins (RAMM Workshop)

Gaia Calling

Lou Jenkins
(RAMM Workshop)

Applying modelling software to swarms wasn't all that different to looking at storms. The darned swarms kept getting in the way of the storm work anyway, and it didn't take a lot to tweak the code and refine the results into clearer and clearer representations. The results were really rather beautiful, and more than once Jo had considered what a gorgeous design this or that swarm image would make. She wished she'd taken more time to learn some sort of craft skill, so she could render these natural wonders into artistic form.

Kim and Sam had agreed about the beauty of the images at first, but they hadn't been so on board with the idea of crunching the metadata to see if there were any repeating patterns, either in individual swarms or across the globe. But the technology was there, and when Sam met an entomologist PhD candidate who wanted to study the effects of climate change on locust swarming in the US, the money and motivation was suddenly there for a major project to model the huge congregations of flying insects more accurately, and to develop algorithms to look for patternicity.

Some of Jo's colleagues questioned the sense in the Met Office resources being devoted to the task, but Jo, Sam and Kim made a compelling presentation, arguing that better understanding and imaging would in fact assist in both the forecasting and observation of weather systems, while adding to the body of knowledge on the effects of climate change on the ecosystem. This all fed right in to current funding fashions.

That's how Jo came to develop ever finer resolution modelling of the increasingly troublesome insect swarms which were now circling the globe. It had applications for air traffic

safety too, so win-win-win. And then the patterns began to show up, from Cancer to Capricorn, equator to poles, certain patterns were repeating, again and again, on all scales. Within individual swarms, and on a macro scale too, taking all concurrent events into account, the same patterns would show up globally. It was difficult not to imagine some sort of cognisant direction to it all. She wasn't usually given to such fanciful ideas, but the evidence was quite compelling. When she asked Sam and Kim if they thought there might be something in it, Sam laughed.

'Call yourself a scientist?' Kim said, and Jo had been inclined to agree with them both.

Jo's fingertips were white as she gripped the pencil, leaning close over her new sketch pad. She'd never even owned one before, but she needed something to do to fill her free time while on secondment to RAF Lossiemouth. She would be providing forecasts for the forces and carrying out research into the impact of the newly constructed wind farm off shore. It was a pretty dull routine and she reckoned it was never too late to learn a new skill.

'Dammit,' she slammed the pencil down on the pad, scowling at the chaotic lines on the page. This was a stupid idea, she'd never be any good. And every time she set out to draw a flower or a mug she ended up trying to reproduce that flipping pattern. She pushed the pad aside, snatched up the empty mug and went to make more coffee.

Waiting for the kettle she thought about the data she had been collecting. She'd been aware of the radar echoes given off by wind farms for some time, and had contributed to coding to filter out the effects. She decided to run the echo data through her swarm modelling software, prompted by little more than idle curiosity.

As the results layered up on her screen, Jo's pulse quickened. Delicate lines traced an intricate spherical pattern. It was unmistakable; the wind farm echoes were a match for the bug swarms. It was as if the very air was whispering to her. Jo fumbled for her phone.

‘Dom?’

‘Jo? Everything alright?’

‘Um. Yes,’

‘Ok.’ Dom clearly wasn’t convinced. They never called each other at work. Now he’d be worried.

‘I’m fine. Just missing you.’

The tension left Dom’s voice. ‘And I you,’ he said, ‘Talk later?’

‘Yes,’ She hung up. Just hearing his voice had settled her nerves. She couldn’t share this yet. She had to be more certain.

Jo decided to sleep on it, run it again in the morning and widen the pool by drawing in data from other wind farm locations. One thing was for sure, she would have to be very sure of herself before she took this to anyone else. Even Sam would struggle to swallow this one. Jo took off her glasses, rubbed between her aching eyes and shut down her terminal.

Unseasonably heavy rain hammered against the window of Jo’s room in the officers’ barracks, hurled by ferocious winds, and Jo lay awake thinking of home, her daughter and husband, tucked up safely against the storm which she knew was battering the whole east side of the country tonight. She tried to sleep, but the noise was impossible to ignore, and she knew that a flight was due to reach the base in the early hours. She’d supplied the forecast and the decision had been made not to redirect the flight. Funny how the workings of the base had crept into her thinking. How flight plans, stopping distances in certain conditions and cross winds had become matters of interest and concern to her in recent weeks. Things she had never given a thought to in the past. Everyone had reassured her that these conditions were a piece of cake for an experienced pilot in a Poseidon P-8A. Eventually she drifted off and dreamed of her daughter playing with the rain stick they had picked up on holiday in Mexico.

The rain had eased and chatter in the mess over breakfast confirmed that the Poseidon crew had made it down safely during the night. She had to admit that there were some benefits to this secondment. Her own en-suite room, three hot meals a day, no housework and all her off-duty hours free to do as she wished, it was a life she wouldn't want to get too used to, but it did make for a pleasing break from the life of wife-mother-professional woman that she had been juggling for several years. Returning to her station Jo carefully perched her coffee on the roundel coaster on her desk and fired up her terminal. She fidgeted in her seat as she brought up the data covering the Moray wind farm for the previous night and fed it in to her modelling program. She took quick sips of the too hot coffee as she watched the screen pointlessly, knowing that the number crunching would take a good while, but eager for the results. She turned to her tablet hoping to find something in her mail to keep her enthralled while she waited but was too distracted by the rapidly filling progress bar on the computer screen. The Subject 'For Mummy' and from Dom's account caught her attention. She smiled as the small screen filled with an image of Peg and Dom grinning madly and sporting digital embellishments which made thirty-four-year-old, bearded Dom look like a Disney princess and pretty little Peg look like a shimmering silver fox.

The blossoming imagery on her desktop screen drew her away, the radar data collected overnight having been transformed into a fully navigable three-dimensional representation of the atmosphere in the vicinity of the off-shore wind farm. A chill spread across her forearms under the thick jumper she wore, raising goose-bumps as she used the mouse to glide through the space rendered before her. There was the pattern she was growing so familiar with, but this time it was frantic, overlaid again and again, as if the invisible artist had gone repeatedly over and over each line, ever more emphatically, pressing harder and harder until the pattern was visibly shouted all around her. Last nights' storm had howled and bellowed, and

the atmosphere had scored and underscored the message. Vibrant pixels screamed at her - Listen!

Jo let go of the mouse and sat back in her seat, puffing out a breath she hadn't realised was held. There was no ignoring this, no convincing herself she must be mistaken, but what to do next was beyond her for the moment. So far as she knew, Jo was the only person on the planet to have spotted the patterns in the wind farm echoes, and to have linked them to the swarms. What happened to this information and how it was moved forward, what analyses were done, who saw it, what types of minds were brought to bear on it, was entirely in her hands. She wasn't even sure she wanted to share her findings. She'd had to work hard to reach her position. She should have a great career path ahead of her. Could she jeopardise that for the sake of some pretty patterns in the air?

Jo started running more data, gathered from observation stations located near wind farms in the UK and further afield, but she knew what she was going to find. She was as sure of it as she had been of the sex of her unborn child eight years earlier. No reason or logic to it, she just knew. She had to prepare the forecast for the base's operations team, but half her mind was on the patterns and what might be causing them. How could the behavior of vast swarms of flying insects and the atmospheric echoes caused by the motion of blades on wind turbines possibly be connected? And even if she found out how they were connected, what did that mean, if anything? What was she actually seeing here? She decided to trawl through the coding of her software one more time to see if there was anything in there that could possibly explain the repeating patterns. Meanwhile she would have to get on with her daily routine here at the airbase until the secondment ended. She had seldom felt so isolated, the lone meteorologist for who knew how many miles around.

Every off-duty moment saw Jo either rechecking coding, where she found nothing to explain her results, or trawling

through journals in search of papers on wind farm echoes and insect swarm formations. She found nothing more than observations of the increasing incidence of ever larger swarms, or brief notes concluding that wind farm echoes posed no threat to navigation nor to local wildlife. Jo was still unsure whether to share her findings, and with whom, but the building body of evidence resulting from each set of data weighed on her mind, making her irritable and disturbing her dreams with images of huge white wind turbines strobe lit by lightening against stormy skies, waves broiling and dark swarms of buzzing insects rising from the swell like dark foam tossed up by the sea.

Jo was busy summarising the forecast for the next twelve hours in readiness to circulate it at 18.00 hours, when her tablet chimed. She glanced at the screen. When she opened Dom's message, everything changed.

The screen showed a brightly coloured mandala-like image in rainbow colours on a dark background, rendered using a digital drawing app. Jo picked up the tablet to look more closely. It was beautiful, and it was familiar. This image, drawn that morning by a little eight-year-old girl for her absent mummy, was unmistakably THE pattern. As the tablet jittered in front of her Jo realised that her hands were shaking violently. She laid the device carefully on the desk, took a couple of deep breaths, and tried to focus on the bulletin that was due in twenty-eight minutes. Then she snatched up her phone. She felt a flood of relief at the sound of Sam's voice.

'Sammy,' she said, 'this pattern is doing my head in. It's in the wind. It's everywhere.'

'Ok, hun, take it easy,' Sam tried to soothe her, 'You've just been away from home too long, Jo. You're getting things out of proportion.'

'Sammy I'm serious. I'm forwarding a picture Peg drew for me this morning. Tell me what you think.'

Returning to her bulletin, Jo chewed on her lower lip in a way she hadn't done since her student days. When she had circulated it, she called Dom.

'Has Peg been on my pc?' She said before Dom could speak.

'Of course not' he sounded defensive, 'She knows it's out of bounds' Jo sighed deeply, he was so touchy about taking care of things while she was away.

'Sorry,' she said, 'I know you wouldn't let her. It's just...' She didn't know how to go on without getting into the whole patterns thing, and it was all just too crazy. She rubbed her forehead.

'Jo, what's up?' Said Dom 'And don't tell me it's nothing.' He waited through her silence. She puffed out another sigh.

'It's this pattern, Dom. You know the one I told you about in the bugs?'

'Yeah.'

'Well, she drew it. Peg's picture you sent me, it's the same pattern. And it's in the wind farm echoes too.' Laughter was the last thing she expected.

'Sorry' said Dom, 'but it's everywhere, Jo. You've been out of things for too long. That damn pattern. She's been drawing it over and over this past week. And now you reckon you can hear it in the wind?' There was another chuckle down the line.

'It's not funny.' Jo hung up.

Jo copied Peg's picture and ran it through an app to search for similar images across the web. She gaped at the page of results wondering how she hadn't noticed it before. She clicked on a few to see the details. There was such a multitude of renderings of the pattern, in such diverse places. A huge graffiti version on the side of a municipal building in Cardiff had appeared mysteriously one morning and was being attributed to Banksy. A spotted Aboriginal-style version was all over surfing gear in Australia. A prominent Russian sculptor had recently

unveiled a life-sized human form composed of tiny three-dimensional wire copies of the pattern Jo had originally spotted in the insect swarms so many months ago. There was even an image which popped up on Instagram of a woman with the pattern tattooed in the small of her back. So now the human mind was throwing up the pattern too. Jo walked circles in her tiny office, fanning herself with her tablet as she flushed with heat. What the hell was going on? She stopped pacing and muttered to herself.

‘Come on, get a grip. Approach this thing logically. What’s next?’ She looked again at the page of creative renditions, then laid the tablet face down on her desk and sat down. She ran a hand over her hair, smoothing strands out of the way and set to work.

Working through the night, Jo sourced data from as many fields of research as she could think of, both terrestrial and astronomical, from recent papers and archived material. She ran data on star clusters, plasma flow in the atmosphere of the Sun, polar ice cores, abnormal temperatures and rainfall in many parts of the globe in recent years, data from deep sea thermal vents, unusual wind patterns recorded at weather stations across the globe, and even seismic data, the shivering and trembling of the Earth’s crust. Everything from terrestrial sources from the past two years showed the same patternicity. Not a single earlier one, nor any of the off-planet sources showed anything like it. When Jo checked the incidence of the pattern on the web she found that the image showed up in many artistic forms, even down to the movements in a new piece of contemporary dance, but only in the past eighteen months. Could the planet be trying to communicate something? Jo shook her head and laughed. Dom was right. She was tired and lonely and a little overwhelmed and she felt the prickle in her eyes. She swallowed hard.

‘Sleep. You need sleep, missus.’

But she dreamed of the wind, howling and battering and screaming at her. The damn wind, smashing at her window,

hurling great gusts, slamming into the door of her room. She woke with a start to silent darkness. Dom's words came to her through the thumping of her pulse. Could she hear something on the wind? Could she run the data back the other way and see if there was any meaning in the pattern? Jo dressed quickly and headed back to her office, preparing coding patches in her head as she went, hoping the programs could be coaxed into working together smoothly.

Jo lined up the data from the Moray wind farm and hesitated. This must be crazy, but the compulsion was irresistible. She took a deep breath, leaned in to her screen and hit Enter.

The voice that came from the speakers was eerily similar to her own as she had heard it on video clips countless times. It wasn't making any sense, jabbering in something like human speech, but nothing she could catch hold of. On the screen a stream of short phrases was appearing in time with the speech. Jo leaned closer to see if the text made any sense. To see if the bugs, the echoes, the seismology, the thermal vents, and the creativity of humankind meant anything.

‘...prekasno.

Dit is nie te laat nie.

Ajuni mast vel jal na

Encara no és massa tard.

Abhi bhi zyaada der nahin hua.

Siyo pia marehemu.

Nije puno kasno.

Chan eil e ro fadalach.

Dydy e ddim yn rhy hwyr.

Yayo kwete kunonoka.

C'est pas trop tard.

Det är inte för sent.

No es demasiado tarde.

Es ist noch nicht zu spät.

Itni bhi der nahi hui.

It's not too late...’

Not All Plastics in the Ocean are Bad

Argo floats
drift down,
along, up,
capture heat,
salt, pressure,
whisper to satellites
in the sky.



Dr Freya Garry

For more information about Argo floats please visit argo.ucsd.edu

Survival Kit

Reusable bottles – and more than one.
Enough for a drink to fend off the sun.

Handkerchiefs – they'd last longer than tissues,
for wiping noses and bandaging wounds.

A cap, so when the polar ice melts
and the sands scalds your feet,
at least you've saved
your face from the heat.

A Swiss Army Knife – sturdy thing,
strong and swift enough to open the remaining
bottles of beer, made with our bare hands to
twist and slice because we can't by hand.

Get a crowbar. Before nature takes the cities,
ransack the buildings for paper, pens, stickies,
address the state the Earth was in
when you were born with original sin.

For the young, a fresh start,
to love the Earth and its clever art.
For the old, the young.
Laugh at the child poking out their tongue.

One pound, to remind you how spend
creates the world around the riverbend –
spare no pennies. Pick them up.
Soon, you'll have a full cup
of the small and worthless
uniting, but maybe that isn't worth the stress.

Finally, for ocean acidification, and landfill,
and the dirty, soulless animals we killed.
For the successful capitalism and weird-looking crops,
the expensive buildings where we no longer shop.
Radiation, the plastic you swallow,
and the carbon steps we walked for you to follow,
we leave you with an apology.
I can't say we didn't do this deliberately.

Philippa Uden (RAMM Workshop)

Carved Wooden Figure

Now you see me, gazing through glass:
A mute oak figure, cracked and dried,
Time-depleted. Tiny wax beads
Bedeck my body like shiny black tears.
I made it through, preserved but broken,
To be pondered, questioned, pitied and feared,
Observed by you.

Once I stood, a forest giant:
Weaver of sunlight, shelter for birdsong,
Bringer of shade. The ring of an axe,
The stroke of blade that hacked and felled,
Wrenched me from raw earth, torn, forsaken;
Till the skilful hands that lifted and held me
Brought me to birth.

Planed and carved from the patient wood,
Honed at last into human likeness,
Proud and erect, my chiselled eyes
Surveyed my people. I knew the score.
In quiet despair and hope they bore me
Down along by the cold, lapping shore,
To lay me there.

The hungry waters closed over my head,
Hiding the sky. The tide of centuries
Erased my story, my reverence, my name;
Till a curious frown on a stranger's brow
Raised me to view, drew me out from the dark:
Reduced, defiant, as you see me now,
Staring at you.

Now I see you gazing through glass,
A mute bone remnant, all that remains.
What chance not taken, what sacrifice unmade
To abate the rising sea, the melting ice,
The parched plain? Is it me or you
Longing in vain to pay the price,
To start again?

See me, your reflection: heed your fears.
Or else turn your back forever,
Weeping wax tears.

Jess Collins

A prehistoric wooden figure, about 2,400 years old, was uncovered by quarrymen near Kingsteignton in 1867. People in prehistory may have believed that rivers, bogs and other watery places were sacred, and this object could represent an offering to the spirits of the place, possibly in response to a changing climate bringing more rain.

Three Collaborative Poems

Love the Earth

In the heat-wave we're glad of woodland
shade while talking about change. We know
leaves should fall in Autumn and grow
in Spring. In the roughness of barks
and smoothness of paper we hear
roots spreading, lumber jacks shout out
as they fell far-away forests. Here, sharing
our shelter are birds, beetles and bugs.
Trees, much older than us let us breathe,
build words, when a whoosh of wind reminds us:
Recycle – Recycle – Recycle – Recycle

Don't Waste Water

Last week when we walked
to school in the city we didn't notice
that grass isn't growing; or know
cows are eating next winter's food.

From the far side of a field, Dartmoor, golden
and in view, we can see why the pond's

dried up – just a slip of mud, and wonder
where wild animal's drink? What we can do?

At night, in the countryside, bats fly,
we hear owls and insects, see stars.
In the city there are car lights, planes,
take-away food and plastic.

We want to reverse pollution,
protect the flow of water,
collect rain in the best places,
stop the ice caps melting.

The Earth is Our Garden

The Victorians tried to protect plants.
They built walls to absorb the sun's rays
and block the wind. Now ants, scuttle
from the heat under crumbling soil.

Insects gather as if performing a dance,
tortoiseshell butterflies, cabbage whites.
Day-time moths are attracted to snap-dragons

the colour of ice-creams. Watered, among
tilled rows, and almost ready for harvest,
beetroot, carrots, potatoes – in the herb garden,
rosemary, basil, oregano, mint, a lavender bush
covered in bees. Sunflowers, loaded with seeds reach
for the stars. The air smells good here. Elsewhere
animals are dying because of climate change.
The Earth is our garden – it needs nurturing.
A scarecrow stretches out its arms. A blackbird sings.

*By pupils from Marine Academy Primary, Plymouth while on a
Residency at Nethercott House with Farms for City Children*

Three Drops

Serengeti drying, Maasai walk afar.

Cows drink, milk and water for her children
to start their day in the burning heat, seeking green.

The well line crystallises in the Bangladeshi heat as
the ocean creeps inland, turns the well to saltwater, the tang
heavy on their tongues. Relief an impossible distance away.

Cut glass jug: pregnant-full and sparkling, cool
water waits in the home of family gone to enjoy
the London sun. Condensation beads, unheard, ice cracks.

Freya Garry, Charlotte Newbury, Natalie Garrett

A New World?

I was five: a bubble held by a thread,
my world existed inside my head.
Games played with bottles and cans
all made from the hands of man.

I was twelve: my world changed,
the landscape and the everyday terrain.
I planted trees at my new school,
opened my eyes under the pool.

Southern rains and southern droughts,
dangerous animals all about.
My senses were informed and created
with a new awareness – otherwise unstated.

I was twenty: I knew colder shores,
far from campfires and eating smores
I settled on finding out why,
humans thought we could rule the sky.

I've always studied in search of truth;
debating, questioning and probing too.
Yes, we are special, but only because
we've been given a duty from above.

If we learn to swallow our pride,
take glory in our stride, we can solve
others' problems, then be free
from the excess of me, me, me.

Victoria Omotoso (University workshop)

Oak Tree

Placed to draw the eye, define the edges
and denote the space where I am not.

I am a feature and a framing,
a constructed artefact of living matter.

A curated collection
of the processes of life.

I am dappled golden light,
endlessly moving, irreducible.

I am the body-warm solidity of
Trunk.

I am shelter
from the sudden rain. The downpour
of sunlight in the summer heat.

I am home
to tenants who find and occupy
my every fractal surface. Indifferent
to my larger scale of living.

In the cracks and creases of my
Stone-hard skin, I am a microcosm
of the earliest creation; A pioneering ground
for lichens in pigmented partnerships.

I am stretching, searching.

A mirror of myself

below the ground, mining rock for soil.
Impossible to tell where roots end
and fungal filaments begin.
I am an up-pumping of water,
Earth to Air.
A down-drawing of gases,
Air to Earth.
A confluence of molecules in time and space;
Carbon, hydrogen, nitrogen, oxygen.
I am the opposite of breath.
I am a consummate recycler. Each
Autumn I let go the work of Spring
to remake the living bed in which I stand
(Though now they come with rakes
and smouldering fires to
'clear away the Mess').
I am a story of every season I have lived,
Light dark light dark
Grow stop grow stop.
Good year.
Hard year.
Remember that long winter in '62?
I could keep you warm though.
I am bough, crown, fork, trunk
but look again and I am

limb, twig, log.

Stump.

I am three hundred years of solidified sunlight.

ii

I am latent energy, sleeping in the woodshed.

Stacked, toppling, temporary home of

Spiders, moths, woodlice. Inhabitants of

Secret spaces in the dry and dark.

I am warm embers, companions,

The smell of hot toast and tea on a winter's afternoon.

I am ash, smoke, divergence of those elements

That flowed together for a time.

From which I built myself.

I am drifting molecules, an atmospheric blanket

To keep you sheltered from the cold and dark

Out There.

I am sustenance, base matter

From which some alchemy transmutes a leaf.

Tom Powell



'Oak Tree' (Monoprint – animation still) - Tom Powell

The Hunter Hunted

She watches,
eyes narrowed against the polar sun,
twin cubs lean against her yellowed flanks.

A man
skids across ice, two dead seals loll
on the sled. Panting dogs strain against ropes.

Her offspring
are hungry, the floes at sea
far apart. She's too tired to hunt.

A crack
like a pistol shot, panicked yelps,
bark of a man, the scent of adrenaline,
the watched
dive headlong through the newly opened
fissure from white to black.

She stirs,
nostrils flaring. There's meat.
They need to eat.

Peter Stott (RAMM Workshop)

How Hot?

The Lady well, our Motherwell.
Divine water meant to quench
a traveller's thirst.

Once it was a bath house,
furnace and frigidarium,
soothed Roman souls.

It's become a drowned
landscape, a rowing regatta.
And here we meet you humble

gelati van cooling
the crowds, served
confection in a cone.

Furnaces still burn,
engines idle, plumes
of warm air rise.

So that we must ask,
'How hot now
is the land of the Scots?'

Mark McCarthy

Inspired by Strathclyde Park when new temperature records for Scotland were rejected in June 2018 because of an ice-cream van being parked close by.

Red Bell

The red bell curve
as it's pulled along,
louder, deeper, hotter
the sound all wrong.

Jane Strachan

Fern

I didn't take note of your name,
the fretwork lace of your leaves was enough.
I was caught, the way a child is captured
by the silk of catkins, the silver of a snail trail.

I planted you in the shady corner, fed and weeded,
knelt to administer libations of rainwater.
And watched you unfurl, brilliant, translucent
jade against the blush of the rose.

This summer I am busy,
and the garden is too hot to sit in.
I look past your withered fronds for days,
not recognising your parched colours.

I've heard of ferns migrating over millennia
across landscapes, seeking dampness and shade,
their journeys captured in stone.
I didn't make a note of your name.

Kim Squirrell

Performance

The workshops responded to provocations from climate scientists that led to the writing of ‘tiny plays’, scene workshops, and devised performances. We explored different performance strategies for presenting the stories created. At Dartington Hall we were able to use the outside space to great effect and a sample of the ideas and work produced follows. These were the workshop guidelines:

Invitations to creative performance journey scores outdoors:

- Find a spot where you can connect the site here to your research...
- Without moving from this first spot, look into the distance and find your research somewhere else in the space...
- Now, move to a second spot to get another perspective on the same thing...
- Find a third spot where you can bring the space of your research (a fieldwork site, a lab, your office, somewhere else) to the space here...
- Lastly, locate a final spot where you can sit and look back at your first spot. Imagine one change.

What if?

Under the apple tree a question is formed.

New perspectives in the meadow. Turn the words
around.

How many ways can the question be asked?

Tunnel vision in the old railway. How can we
narrow our question down to a testable
hypothesis, and give us a clear direction? This
step is often the hardest.

The kitchen garden.

How would we design an
experiment?

What ingredients do we need?

The stream. Reflections on the journey.

Where will the next one start?

Mark McCarthy

The intricacy of the bark

on a tree

reminded me that variability exists everywhere,

especially in a garden.

The stone building's bricks weren't uniform,

but many different colours and shapes, each one unique.

The oceans are complex and varied, not all the same; instead of being like the uniform blue sky, the ocean is like the greens across the garden, so many different shades.

Trying to understand the oceans is like trying to understand a whole garden from one flowerbed – we are only able to observe and measure a very small part of it.

What if the tranquillity of a country garden (our planet) was destroyed by a lawnmower (human forced climate change) making a lot of noise and adversely affecting our experience of this beautiful space?

Freya Garry

On the lawn, seeing the dark clouds and strong winds coming,
being swept by the gusts and rain to shelter under the apple tree

Scared

Look at the rain, start overcoming fear and become curious

slowly venture out and enjoy
drops.

Run

enjoying the rain

and swirling towards the patio

with the umbrella

and play with it.

Joy

Go through the lawn and collect flowers and friends.

Climb the steps

like in a temple

and do offering

and pray

Go back to the lawn and look back at the sky
and wonder about the power of a monsoon and our
vulnerability to its devastating changes

Charline Marzin

Squelching

Tree

Moisture filled clouds

Roads carving the landscape like rivers

Restoring nature

Kate Baker

Under the thatched veranda at the 'Summer House' people sheltered from the rain in years gone past.

There is pink blossom on a cherry tree nearby. It is a sign of spring.

Down some steps, you come to a two-storey house in miniature. It is where children used to play in the autumn chill.

A short walk away is a big hedge, through which you glimpse a modern building with a flat roof. Through the glass, you see people having a meeting. Maybe they are climate scientists charting our hothouse future if we carry on emitting greenhouse gases.

You look back to all these buildings from across the grass. There is a sign that says, 'Welcome to the grade two star gardens at Dartington'. They are beautiful but the seasons are changing. One day a violent storm could destroy it all. What will our grandchildren think, if it was our fault?

Peter Stott

I chose to take my 'climate services' perspective to peer into the future and imagine how landscape, nature & activities at Dartington would be transformed, a combination of a much warmer and drier climate, and the loss of land through sea-level rise:

Many senses for weather, climate & climate change



On the spot (vine), near summer house



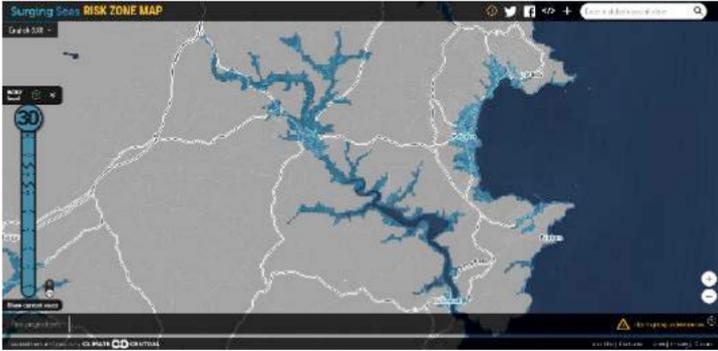
The future of the lawn & parkland – vineyards & palms



‘From far away’ – Dartington Pier & Paignton Ark



Another perspective – ‘Climate Change & Tourism / Heritage’



Bernd Eggen

Song Writing

Some sample lyrics created in the Climate Stories workshops:

Build a Wall

Here in the dark, before the dawn,
We fear the coming change.
Despite the falling leaves, we plant the bulbs,
That turn to shoots of spring.

Chorus

*We can build a wall, we can build a wall,
Against the rising tide.
But we don't need a wall if we change ourselves,
Tame the beast inside.*

Her kingdom gone, the queen sleeps on,
In spring she will awake.
We build a hive, where her children thrive,
Spreading colour where they fly.

Chorus

It's quiet now, there is no song,
The birds have flown away.
We can plant the seed to bring them home,
And hear their tune again.

Chorus

© Freya Garry, Miranda Addey, Rob Chadwick and Rosie Eade (2018)

Live Each Day

I've been yours a million years now
This love of ours it will never grow old
It's been worth the sweat and tears now
What we've got cannot be bought nor sold

When we met I had nothing
You gave me food and a hand I could hold
I haven't always been so loving
And sometimes you, you've blown hot and cold

Chorus

*You wrapped me up in a blanket
In a blanket that was studded with stars
Just like the first night we found it
And we're going to live each day,
Live each day like our last*

I know I took you for granted
Plenty of times that I angered you so
Some things I shouldn't have planted
Left you barren where nothing would grow

Maybe those times are behind us
Maybe there's still trouble ahead
But I know good times will find us
There'll be sunshine and laughter instead

Chorus

*I'll wrap you up in a blanket
In a blanket that is studded with stars
Just like the first night we found it
And we're going to live each day,
Live each day like our last.*

© Dan Plews, Elena Kozlova, Tamzin Palmer and Tom Powell
(2018)

The David Attenborough Song

Dear Sir David, this is Lucy, I am eight,
Yesterday I stood barefoot down by the ocean
With the plastic froth lapping round my feet
I stood and watched a small ship sailing

Across the blue sea, do you think it is too late?
That ship that sailed, d'you think that it will be the last one?
I couldn't go, I wasn't old enough and so
I stood and watched the small waves breaking

Chorus

And the blue world is out there

The blue world is waiting

In the blue world the David Attenborough is sailing

Dear Sir David, this is Lucy here again
And I know that you've been very busy filming
A billion sounds a lot, is that as many
as the pebbles on this beach?

They were so hot I had to jump from foot to foot
Is this what you meant when you said the world was warming?

And that ship shimmered, just like a mirage
Is it forever out of reach?

Chorus

And the blue world...

Dear Lucy, sorry for the late reply
I get a lot of letters asking these same questions
But you're still young, you mustn't fret
Because you still have time to find out all the answers

There are billions of us in that little boat
With just one origin and just one destination
But Lucy if we rock that boat together we can change the boat's
direction

Chorus

And the blue world...

© Dan Plews, Ailsa Barrow, Jane Strachan and Peter Stott (2018)

** To listen or know more about the musical notations visit
www.climatestories.org.uk*



'Satellite' Collagraph - Professor Chris Rapley

Contributors:

The Instigators

Peter Stott is Professor of Detection and Attribution, Department of Mathematical Sciences, University of Exeter and a Science Fellow at the Met Office Hadley Centre. He has a distinguished research record in the science of climate change and extensive experience in communicating climate science through the Intergovernmental Panel on Climate Change, public engagement events, and appearances on radio and TV.

Pierrette Thomet is a classical singer, artist and founder director of the award-winning WAM - Weather Art and Music, an initiative affiliated to the Royal Meteorological Society. Together with Peter Stott she imagined *Climate Stories* into being, and has acted as the arts co-ordinator and overall administrator to the project.

Arts Leads

Rosie Eade: Singing in the kitchen and doing maths puzzles by the fire – a quirky start in life that has led to a decade as a climate research scientist in the UK Met Office, and a freelance singer-songwriter, multi-instrumentalist and tutor, with regular appearances at international science conferences and national music festivals. www.rosieeade.co.uk

Dr Sally Flint is an award-winning writer who lectures in Creative Writing. She is co-founder/editor of *Riptide Journal* based at the University of Exeter and a tutor with The Poetry School, London. Her current research interests include investigating how the arts can benefit and complement interdisciplinary projects.

Fiona Lovell came to art relatively late, gaining a first class degree in Fine Art at the age of 50. She is Outreach Co-ordinator and print tutor for Double Elephant Print Workshop in Exeter. Her own work draws on nature and deals with current political or social anxieties.

Dan Plews: Since 1995 Dan has played, taught and toured across Europe, the U.S., and Canada, both solo and together with UK folk luminaries including Mercury-nominees/Folk award-winners Eliza Carthy and Jon Boden (Bellowhead). His songs reflect the physical and emotional geography of a traveller, teacher, father, musician, and Englishman abroad.

Dr Evelyn O'Malley is a Lecturer in Drama, Theatre and Performance Studies at the University of Exeter with a background in performance practice. Her research, teaching and practice concern weather, climate-change and nonhuman nature in theatre and performance.

Other members of the core project team

Felicity Liggins is Met Office STEM Outreach Manager. She has extensive experience of innovative public engagement and has significantly increased the STEM capabilities of the Met Office, inspiring early career scientists to get involved in public engagement.

Dr. Ewan Woodley is Senior Lecturer in Geography at the University of Exeter and a leader in the development of educational research on environmental issues including research into constructing knowledge and understanding of hazard risks.

Prof Stewart Barr is Professor of Geography at the University of Exeter with a strong track record of working with an extensive non-academic collaborator network to understand behavioural

change, and to explore new knowledge frameworks for engaging with environmental change.

Prof Chris Rapley is Professor of Climate Science at University College London. With the playwright Duncan Macmillan he wrote and performed at the Royal Court Theatre, London the acclaimed play '2071 – The World We'll Leave Our Grandchildren'. In 2008 he was awarded the Edinburgh Science Medal for having made 'a significant contribution to the understanding and wellbeing of humanity'.

Miranda Addey is the South West Regional Manager for the Institute of Physics. She has much experience of communicating science with the public, and is involved in IOP rolling-out programmes centred around arts and writing.

Dr Catherine Muller is Head of Public Engagement at the Royal Meteorological Society. She has extensive experience in educational outreach, public engagement and science communication activities.

Climate Scientists

Dr Kate Baker is a Research Fellow in the Centre for Water Systems at the University of Exeter. She is currently working on a research project which aims to develop a new paradigm for urban water management in response to emerging challenges such as changing weather patterns due to climate change.

Sarah Baker carries out research at the University of Exeter into variations in Earth's climate including the cycling of carbon between ecosystems on land and ocean.

Ailsa Barrow is a learning consultant in climate at the Met Office who has also worked as an operational meteorologist.

Rob Chadwick works at the Met Office where he carries out research into the water cycle of earth's climate.

Jess Collins has a background in primary school teaching and museum education. She's also worked in archaeological research, and as a freelance editor, and loves creative writing. She's nearing completion of a PhD, exploring the role of museums and archaeology in the communication of climate change.

Bernd Eggen works on climate change services at the Met Office. For a long time he's been interested in communicating science to a wider audience and using creative and culturally sensitive approaches; *Climate Stories* was the first time he used poetry and drama and he says he 'enjoyed it a lot!'

Natalie Garrett is a scientist at the Met Office. In her work, she brings people together from all walks of life to help society become more resilient to the effects of climate change. In her spare time, she enjoys writing, photography, cooking and advocating lower carbon lifestyles.

Dr Freya Garry graduated from the University of Southampton in 2013 with best in class for Master of Science in Oceanography. She remained based at the National Oceanography Centre Southampton for her doctorate, co-sponsored by the Met Office. In January 2017, she became a researcher at the University of Exeter.

Tim Gordon is a marine biologist at the University of Exeter studying human impacts on natural acoustics in the ocean. Today, the natural sounds of marine ecosystems are being altered by climate change and drowned out by human noise pollution; Tim's research aims to understand more about the likely impacts of these changes and what we can do about them.

Kate Halladay has worked in climate impacts at the Met Office for the past 5 years, specialising in Amazon climate and land/atmosphere interactions. This followed a DPhil at the Environmental Change Institute, University of Oxford,

studying the impact of climate change on cloud patterns at the Andes/Amazon transition in Peru.

Katie Howard is an operational meteorologist at the Met Office where she advises variety of customers on all aspects of the weather.

Elena Kozlova is a climate researcher at the College of Life and Environmental Sciences (University of Exeter) specialising in measurements of the atmosphere at remote locations. Her research focus is making the high-precision atmospheric concentrations of oxygen and the greenhouse gases contributing to climate change and creating the long-term records of such measurements for the use of the research community.

Charline Marzin carries out research into the Indian monsoon at the Met Office and has helped coordinate collaboration with researchers from all round the world working with the Met Office Unified Model for weather forecasting and climate prediction. Charline is a dancer who has developed her dance practice over many years.

Mark McCarthy is a science manager of The National Climate Information Centre at the Met Office. His work provides monitoring and analysis of UK climate variability and change using observational weather records from the 17th Century onwards. In order to understand potential risks of future climate change it is essential to understand the past.

Becks Parfitt is an International Climate Services Scientist, exploring regional resilience to a changing climate in Asia. Commencing her career in the Climate Prediction Programme, her 12 years with the Met Office have also included Account Management and the provision of forecast products and services whilst deployed overseas as a Meteorologist.

Tamzin Palmer carries out research at the Met Office into improving forecasts of the ocean.

Tom Powell researches the effects of human land-use on Earth system processes at the University of Exeter. He investigates possible ways to make this interaction more efficient and sustainable in the future; and also at humans as a newly evolved but very significant element in the relationship between life and the Earth.

Jane Strachan works in the Applied Science section of the Met Office where she develops Climate Services.

Hamish Steptoe is a research scientist in the Applied Science section of the Met Office.

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