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Guildford Environmental Forum newsletter

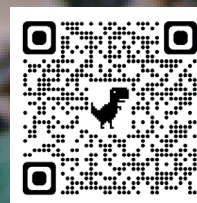
March 2023 - May 2023

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*Crocuses flower early; photographed by
Raymond Smith*



**GEF & ZERO WILL HOST AN ENVIRONMENTAL HUSTINGS
FOR THE LOCAL ELECTIONS ON TUESDAY 25TH APRIL.
COME ALONG AT 7:15PM
TO SEE THE PARTIES PRESENT THEIR IDEAS!**

MORE DETAILS AT ZEROCARBONGUILDFORD.ORG

WRITE FOR US!
Submit articles on an environmental issue that interests you to: info@guildfordenvironment.org

Restoring a wetland on Chitty's Common

By Richard Seymour

CHITTY'S COMMON is located in North West Guildford, between Whitmoor Common and Rydes Hill Common. The underlying geology is London clay, which is a very uniform and mainly marine clay that turns blue when freshly exposed, but weathers brown with longer exposure. In the past, the clay was excavated and used in the production of bricks.

This in part accounts for the very steep break in slope at the southern boundary of the common. Clay soils have low permeability due to the very small particle size, hence tight layers impeding drainage is a characteristic of this rock.

The streams on Chitty's Common flow generally from south to north and the supply of water comes from high watertable and natural springs, or from leaks from water mains. Water from the common eventually flows into the Stanford Brook which is a tributary to the River Wey. The site is managed by SWT, SCC and The Friends of Chitty's Common, a local enthusiastic volunteer group.



Recent work has involved the clearance of ditches on the common together with the use of ditch hooks to remove vegetation and silt from the stream beds, which facilitates better surface drainage. Since the area is largely wooded, some ditches have become blocked with fallen trees which has resulted in localised flooding. This includes the formation of ephemeral ponds. In the southern part of the common, two small ponds have been dug and maintained, providing valuable habitats for frogs, toads and invertebrates.

The largest pond is on the northern boundary next to Keen's Lane. Here, the water leaves the common via a culvert, which sometimes becomes blocked and results in flooding on the road and pavement. Much of this pond was surrounded by trees such as willow and sallow, but, as the photograph shows, SWT has coppiced many of the trees and the result is that the pond is now significantly opened up and looks healthier. Moreover, the use of ditch hooks around the margins has helped to remove pond weed, branches and leaf litter. There are two other ponds in this part of the common that require similar restoration measures in order to make

them attractive to wildlife. By wearing waders, it is possible to access the water, which is just over a metre deep, to recover plastic and other debris that had been thrown into the pond. Since this is public land enclosed largely by suburban housing, fly tipping and litter present major problems to the common.

Significant parts of Chitty's Common can be clearly identified as wetland as the substrate is a hydric soil and some areas are covered by shallow water. Given these conditions, the common supports an abundance of plant life, such as pendulous sedge and yellow flag, and also provides breeding grounds and nurseries for wildlife.

In addition, wetlands, however small, are valuable carbon sinks which help to reduce the impact of climate change. Therefore, their careful management and restoration is vital.

GEF Subscriptions - Thank You!

By Adrian Thompson

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SUBSCRIPTIONS (for GEF members who had not joined in the last two years) for the year commencing 1st April, 2023 were due on 11th April, 2023. For all members, the subscription rate has been maintained again (now for over 12 years in succession) at last year's rate of £10pa (£15pa for a household at one address).

We would like to thank all of you very much for renewing your membership for another year. Over 99% of standing order payers renewed on time this April. Thank you very much indeed for completing both the standing orders and the gift aid returns in the past. The savings in both GEF's processing costs and in volunteer time are very significant and much appreciated. Should your gift aid status have changed in the last two years, please email sarahvsmithies@gmail.com to update our records.

The new "membermojo" software has now been running for two full years now and we are very grateful indeed to Ruth Bolton who set up the process during COVID lockdown and to Sarah Smithies who has recently taken over from Adrian as membership officer for GEF. Now that we have some 350 members, the software has made the administration of the membership database a lot more manageable.

Finally, if you know of anyone in the Guildford area who would like to become a member of GEF for £10pa, then please encourage them to apply for membership. This is the very best way in which you could help GEF to grow in the future. We hope you are getting very good value for your membership of GEF and thank you for renewing your membership for another year.

THREE GOOD REASONS FOR RENEWING YOUR GEF SUBSCRIPTION

- The Rosamund Hub is scheduled to open this Summer, following the successful crowdfund late last year which raised over £4,000 to complete the project.
- A new group of volunteers are meeting regularly to restore the chalk habitat on the Mount and have received grants to enable the necessary tools to be purchased.
- GEF issues a monthly MailChimp of environmental news and a quarterly newsletter. There are also a range of events and meetings and co-ordinates volunteering opportunities. More on the latter can be found on the back page of this newsletter.

Much more detail of the last year will be available at our **AGM at 18.15 on Tues 30th May, 2023.**



Welsh poppies; photographed
by Raymond Smith

GET INVOLVED THIS SUMMER

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THE GUILDFORD SWIFT PROJECT

The Guildford Swift Project is a long-running initiative that relies on a range of volunteer-led activity to support and enhance Guildford's population of swifts, including:

- Identifying when the first swifts arrive in Guildford
- Being one of the team's 'eyes in the sky' – looking for where the swifts are nesting to help locate preferred locations for installing swift boxes to provide nest sites
- Helping install swift boxes in and around Guildford
- Monitoring construction locations to check they are not illegally blocking swift access
- Help set up and coordinate the swift data so we can feed it back to county and national swift plans

If you are able to help with any of the above – it could just be a few hours - then please get in contact with Sarah Davis via email on info@guildfordenvironment.org.uk, or via the Guildford Swift Facebook page.



CREATING A POLLINATOR RESERVE IN YOUR GARDEN

Guildford Environmental Forum has teamed up with Merrow Residents' Association and Zero to develop a garden based project, something you can do at home to enhance Guildford's pollinator population.



With our insects and pollinators in steep decline - we are going through what has been described as an insect apocalypse – our gardens can play a major role as local nature reserves. Pollinator-friendly planting and less rigorous mowing can make a real difference. There are lots of other ways to encourage and support our pollinators. If enough of us join in then we can create real wildlife corridors in and around Guildford.

A launch event will happen where we can talk through the project plans, supply the guide and other resources, listen to advice from specialist speakers and hopefully share some of your own success stories.

Why don't you see what you could do in your garden or help a friend with their garden? For details please email Helen Harris via info@guildfordenvironment.org.uk and we can connect you to the organising team.

Active Travel in Burpham

by Alastair Atkinson

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MOVING TO a lower carbon future was never going to be simple but I don't think anyone would have thought it was going to be this difficult to deliver a cycle scheme in Burpham. Back in December, Surrey County Council announced that in January they were going to close London Road in one direction for 7 months; this was the first many of the residents had heard about the project.

This generated a huge community response, in opposition more to road closure than to the scheme itself. A public meeting was held at George Abbott School hall, filling it to bursting point and with the rest of the attendees having to stand outside and listening through the open fire doors. The end result was a pause in the scheme and a review of the design.

As we move to being more climate aware, we are all going to have to do things differently, and sometimes the onus is on individual behaviours. But it is clear that public bodies also need to change the way new infrastructure is designed and delivered, starting with the way they engage with the community. Failing to do this will result in a continual battle and a failure to support the required transition to a more sustainable world.

What is the Burpham Active Travel scheme?

The proposed Burpham scheme is the first part of a three stage scheme providing segregated cycle routes along London road from Aldi in Burpham through to Guildford High School. Details of the scheme can be found on the Surrey County Council website: Burpham Active Travel News.

What is active travel and why is it important?

Active Travel used to be an interchangeable label for walking and cycling but the concept has expanded to include journeys made by wheelchair, mobility scooters, adapted cycles, e-cycles, scooters, as well as cycle sharing schemes.

As 41% of Surrey's carbon footprint comes from transport emissions then active travel has to be key to our future travel patterns. In the UK just under 50% of all journeys in towns and cities are under 2 miles and therefore for a large proportion of the community could be undertaken not in a vehicle. Active travel has a range of additional health and wellbeing benefits from improving air quality, physical fitness and mental resilience. But there are significant barriers to this behaviour change, and safety is a big one. We know that segregated cycle routes remove one of the perceived barriers to cycling; data from national attitude surveys show that approximately 50% of people would cycle more if there was segregated cycle infrastructure, and 64% supported the creation of cycle infrastructure even at the expense of road space.

We are supporting active travel and urging Surrey County Council to develop a scheme which can be built without huge disruption to the community. We will keep you informed as it progresses through the consultation process.

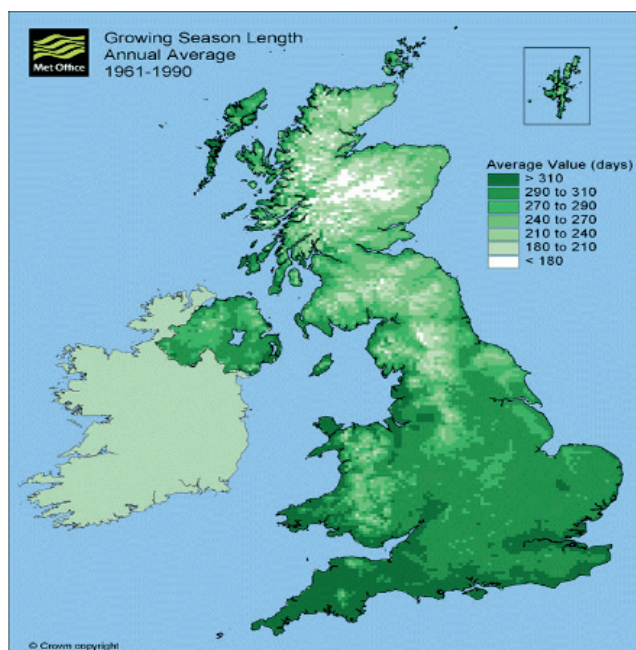
Changes in the Growing Season

By Richard Seymour

THE GROWING season can be defined in a variety of ways, but essentially it refers to that part of the year when most plants experience growth. The Met Office defines the thermal growing season as that part of the year when for 5 days in a row, temperatures rise above 5°C and ends when for five consecutive days it falls below 5°C. We are fortunate in the UK as we have a long run of mean daily temperatures, known as the Central England Temperature (CET), which covers an area from Lancashire to Bristol and London. Data from this source indicates that in the 19th century, the growing season was 244 days, however between 1961- 1990 it was 251 days and more recently between 2006- 2015 it was 280 days. Other authorities suggest a temperature of above 6°C is necessary for plant growth.

However in reality, plant growth is influenced not by the minimum temperature, but, as many gardeners know, by the number of frost free days.

The spatial variations in the annual average growing season length 1961-90 over the UK, as shown on the map to the right, reveals a wide range of factors that impact on our growing season. For example, latitude is evident, with most of Scotland having a shorter growing season than the rest of the UK. In addition, the map also illustrates the significance of altitude. It is clear that average temperatures decrease with increased elevation at a rate of 0.6°C per 100 metres of elevation. This is known as the Environmental Lapse Rate (ELR). In part this accounts for our upland areas having a short growing season (<180 days). Distance from the sea is also important, as the sea has a warming influence in winter and cooling influence in summer. A consequence of this is that some western coastal areas are largely frost-free.



Other more localised factors influence the growing season, such as aspect. It is known that south-facing slopes tend to be warmer than north-facing slopes, or even level ground. Often, under anticyclonic conditions, frost hollows develop in valleys or other depressions when cold dense air flows down slope, sometimes resulting in pockets of frost. The map also shows the urban 'heat island' effect with places such as London and Bristol having longer growing seasons. Soil type can impact the growing season, as sandy soils are more

likely to experience frost than heavier clay soils, because they lose their heat to the atmosphere more rapidly whereas clay soils have higher insulation properties.

Microclimatic factors can also impact on the growing season, and wide variations can occur within individual gardens. For example, the effect of walls can reduce the risk of frosts on clear still nights, and restricts the influence of wind on plants. The degree of exposure to the sun and the albedo of the soil are some of the many microclimatic factors that influence the length of the growing season. Evidence from the influence of climatic, local and microclimatic factors throughout much of the UK shows that the growing season has increased significantly, and this is consistent with the gradual warming of our climate by nearly 1°C.

Sheapleas: Ecological Carnage or just Ash Dieback Management?

by Alastair Atkinson

WE HAVE been aware of the public furore over the ash die back felling that has been undertaken at Sheapleas by Surrey County Council's contractors. I went to see for myself recently and had to agree that the scene is pretty shocking. Large portions of the site have been virtually razed, with huge piles of trees lying around waiting to be cleared. Looking at the cut trunks of some of these, and the extent of the clearance, it is hard to argue that all of these trees were in danger of falling over imminently.

It certainly looks as though the felling has been much more indiscriminate than you might expect in a designated SSSI site. Now it is bird nesting season, it is not obvious how best to manage the clearance of so much timber, and leaving it there for months will kill off much of what lies beneath.



Following lobbying from several GEF members, residents and residents' groups, Surrey County Council has suspended the felling for now and has undertaken to reassess its approach to managing this sensitive environment, in an era of ash die back (90% of the UK's ash trees are expected to be affected). Pausing the felling, however, will not solve the problem of a sensitive ecosystem that is still being damaged by the felling to date.

So, what went wrong? Was the contractor at fault; was the contract itself inadequate for such a sensitive site, or the management of the contractor? What about the risk assessment for the felling . . . why were so many trees cut down, including those at least 30m from a path (and unlikely therefore to injure someone)?

The latest [briefing](#) from Surrey County Council on this project explains their intention to manage the risk of trees falling on the public (and presumably the liabilities to which this exposes the County Council). We are now engaged with them over the process and the development of a preparation an Ecology Mitigation and Enhancement Plan.

There are similar concerns about Surrey County Council's management of ash die back tree felling along the Downslink path so the concern is that this is a more systemic issue. It must be addressed, as we will need to live with this disease for the foreseeable future, and we cannot afford to inflict more damage than is necessary in handling it.



Extending the Surrey Hills

By Katherine Atkinson,
Chair of the Surrey Hills board

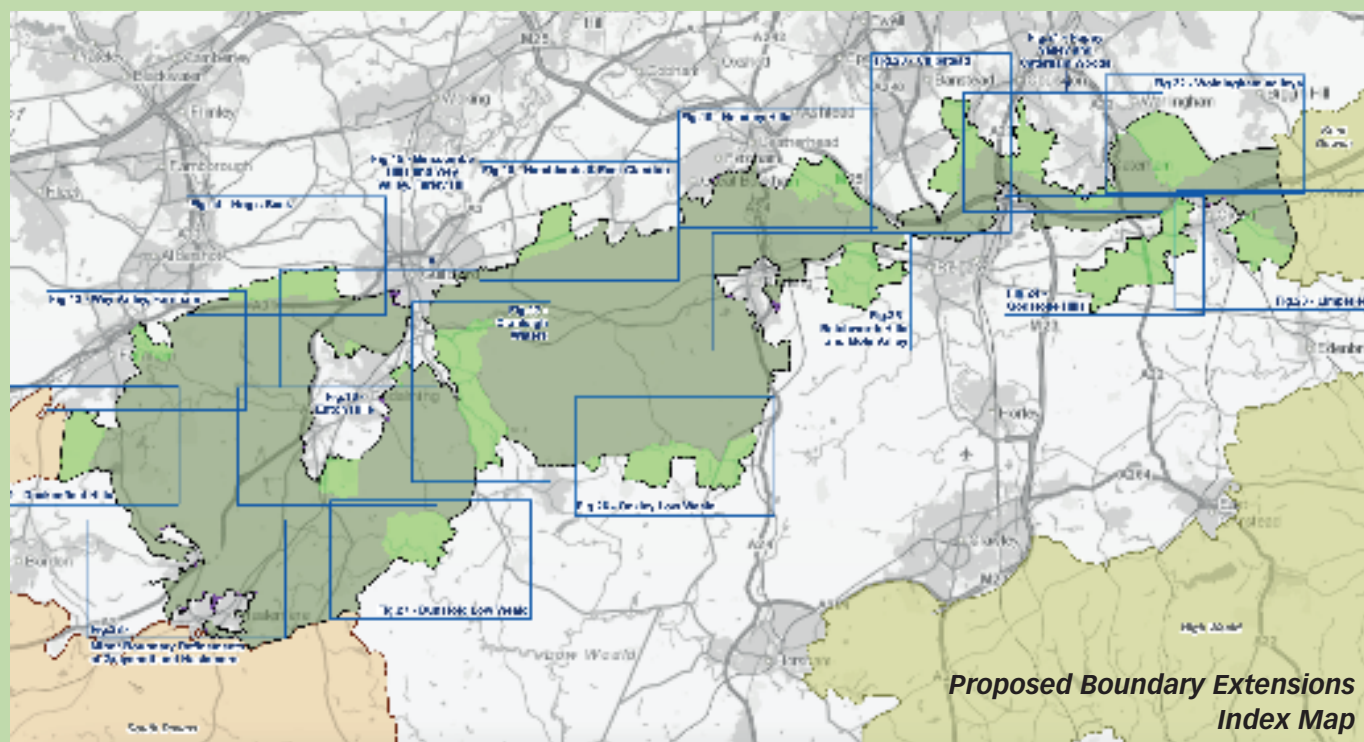
THE SURREY HILLS was designated as an Area of Outstanding Natural Beauty (AONB) in 1958 and is one of 46 AONBs in the UK. Areas of Outstanding Natural Beauty have the same level of protection as National Parks and are designated to “conserve and enhance the natural beauty” of a landscape. The Surrey Hills covers around ¼ of the county . . . at least, it has done, until now.

For the first time since the area was designated, the government has begun a review of the boundary of the Surrey Hills. Boundary reviews do not come around very often, and this means there is a good chance that the size of the AONB will increase, taking in areas that some might argue should always have been included within the protected landscape but which for some reason – lost in the mists of time – weren’t. The proposed new boundary would increase the size of the Area of Outstanding Natural Beauty by around 25%, a land area of over 100km², so this would be a significant change.

In Guildford we have ready access to the gorgeous Surrey Hills as the protected area reaches almost to the edges of the town. But there are some parts of our countryside close to the town, and in particular to the south and west, that are being considered for inclusion. Not only would this help ensure long

term protection for the landscape, but it also opens up additional funding streams – from government and others – to help with nature recovery, climate change mitigation and to support farmers and landowners within the area. The formal process of looking again at which areas should be part of the Surrey Hills AONB is also a fantastic opportunity to engage residents and visitors in conversations about why the Surrey Hills (and other AONBs) are so important, and what we can do to look after them.

Natural England is managing the boundary review project and a number of areas of land adjacent to the existing AONB area were defined early on in the project as potential areas for inclusion within the boundary. Over 2000 responses were originally received in response to Natural England’s call for evidence from the public, and this citizen science helped to shape the areas finally put forward for technical assessment against the criteria for outstanding natural beauty used by Natural England. Factors identified as contributing to natural beauty include landscape and scenic quality, natural and cultural heritage features and relative tranquility. You can read the government’s established guidance on assessing land for inclusion in National Parks and Areas of Outstanding Natural Beauty [here](#).



The Icy Planet: Saving Earth's Refrigerator

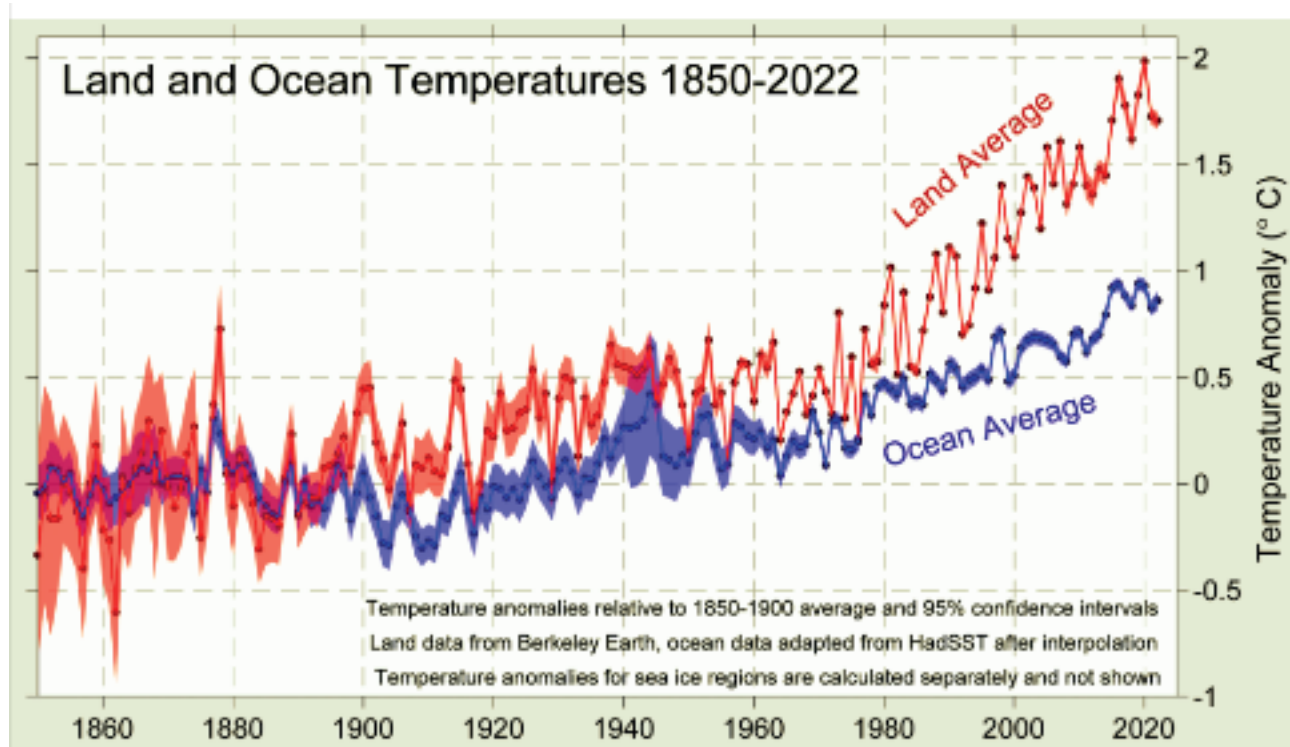
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By Colin Summerhayes

BURNING FOSSIL fuels adds carbon dioxide (CO₂) to the atmosphere. Its abundance has increased from 280 parts per million (ppm) in 1900, to 412 ppm in 2022, largely because since 1950 we have burned more than 90% of all the fossil fuel ever burned. Because CO₂ is a greenhouse gas that absorbs and re-radiates heat, this addition has exacerbated the natural greenhouse effect that keeps the planet warm. The resulting excess global warming is changing our climate and weather.

We have also emitted other greenhouse gases – notably methane (CH₄), nitrous oxide (N₂O), and the chlorofluorocarbons (CFCs), which have added to the CO₂-induced warming. We can calculate their effect by converting them to the equivalent amount of CO₂, then adding that to the actual CO₂ abundance to give the effective CO₂. According to the US National Oceanic and Atmospheric Administration (NOAA), this is about 500 ppm - a lot more than the 412 ppm due to CO₂ alone. No wonder we are warming up.

But that's not all. These gases are not acting alone. They are aided and abetted by water vapour, which evaporates from the warming ocean and is a powerful greenhouse gas in its own right. It's also more abundant than CO₂. 7% more water vapour evaporates from the atmosphere for every 1°C rise in temperature. It helps to form clouds, which also trap heat and re-radiate it. On balance, water vapour accounts for 50% of global warming, clouds for a further 25%, CO₂ for 20%, and the minor greenhouse gases for the rest. CO₂ is a primary driver of change through the entire atmosphere, with water vapour providing positive feedback in the troposphere.



Most people have heard that the global average temperature increase above the average for 1850-1900 is now almost 1.2°C, but that is an amalgam. It is close to 1°C over the ocean, 2°C over land, and about 3.6°C over the Arctic. And the Arctic is where much of the threat of global warming originates, because that's where we have the most ice and snow in the Northern Hemisphere. We also find ice and snow in the Antarctic and in what scientists refer to as the "Third Pole," the high mountains. In these three places, ice and snow are melting away as the world warms.

One well-known result is that sea level is rising. It has risen about 20cm since the 1850-1900 baseline period, but is happening at an increasing rate and is now 4 mm a year. Continued ice and snow melt may cause global sea level to reach between 1.5 m and 2 m by the end of the century, and possibly as much as 15 m by the year 2300. Although this estimate may seem extraordinary, geological data show that during periods of natural warming sea levels did rise by such amounts - for instance, 3 million years ago in Pliocene time, when CO₂ levels were in the range 450-500 ppm.

Snow and ice are also important in another major way, because they reflect solar energy. By doing so they keep our climate moderately cool. In effect, they act as Earth's refrigerator. As they melt we lose that reflectivity (which scientists label Earth's albedo). It's as if we have gone away on vacation and accidentally left our fridge door open; everything inside begins to go off. Instead of that solar energy being reflected to outer space, it warms the ground and the ocean, which emit heat that is absorbed and re-radiated by the greenhouse gases. This creates a climate double whammy: warming caused by our CO₂ emissions plus warming added through the loss of albedo.

Greenland is losing ice by melting at its surface. As its high points melt, its surface will move into lower altitudes where it will melt faster. Antarctica is much colder, and very little of its ice is melting at the surface. However, because the Southern Ocean around the continent is warming, the floating ice shelves around the Antarctic margin are beginning to melt from beneath. The net result is that both Greenland and Antarctica have lost about 5,000 billion tonnes of ice since 1980. Between 1993 and 2018, 8% of sea level rise came from Antarctic melt, 15% from Greenland, 21% from mountain glaciers, and 42% from the thermal expansion of heated seawater; the rest came from the pumping of groundwater for agriculture.

One of our most dramatic indicators of global warming is the loss of sea ice from the Arctic Ocean, which may be ice-free by the summer of 2050. Arctic sea ice is also thinning; most of the 1 to 6 m thick ice, typical of the period up until 1970, has disappeared. Antarctica is also losing its summer sea ice, with the lowest areal value measured since satellite observations began in 1978 being observed in January 2023.

Our Alpine mountain regions around the world are also losing ice fast. Many have lost something like 30% of their glacier lengths already, and the remaining glaciers are projected to lose between

20-52% of their remaining lengths by 2100. This is important because mountain ice forms frozen water towers for nearby populations. As it melts away, so does their water supply.

Shrinking snow and ice also affect animals and plants. Arctic snow and ice provide habitats for wildlife. As they melt away, those habitats shrink. As the Arctic warms, rain replaces snowfall and turns to ice at the surface, making it difficult for reindeer to feed. As the sea ice melts away from Arctic coasts, waves erode beaches and settlements. As Antarctic sea ice melts, penguin populations shift.

Away from icy regions, global warming dries vegetation and soils in already dry areas, making them more prone to wildfires. With increasing evaporation from the oceans due to global warming, areas that are already humid can expect to get more rain and associated flooding.

Anything we can do to eliminate global warming will help us to escape from these various dire side effects. Can we save Earth's Refrigerator? Many governments, including ours, are aiming for Net Zero, which means taking out from the air as much CO₂ as we add to it. This is a tricky thing to do. But in a very real sense it is an illusion, because it means maintaining in the air the current level of CO₂, which will continue warming, ice loss, and sea level rise.

What we really need are, firstly, fewer emissions, and, secondly, "negative emissions", which remove from the atmosphere vastly more CO₂ than we supply. Without "negative emissions" we will hit an average global warming of well over 2°C this century, which means well over 4°C in the polar regions, hence vastly more ice and snow melt. To stop ice and snow melt we must also somehow increase the reflective effects of ice and snow. This could be done in the Arctic, for example, by pumping seawater into the air to stimulate the formation of reflective cloud cover. None of this will be cheap. But if we want our grandchildren and their descendants to experience the same equable climate through which our civilization developed, we have no choice but to work to save Earth's Refrigerator.

This text is based on my new book "The Icy Planet: Saving Earth's Refrigerator", Oxford University Press. You can order a copy via global.oup.com for a 30% discount by using promotion code ASPROMP8. The book should be in Waterstones from February 20th onwards.

EVENTS

All the forum's events are open to the public!

APRIL 26TH, 7:30PM, ZERO

Taking care of our wetlands and rivers using nature-based solutions: a talk by Joshua Bowes, Wetlands Officer, Surrey Wildlife Trust

Nature-based solutions can help us adapt to climate change while addressing the biodiversity crisis. This talk will look into how these solutions can clean up rivers, protect from flooding and sequester carbon.

Please register via zerocarbonguildford.org.



APRIL 22ND, 23RD, 29TH & 30TH, 10AM
Pewley Meadows Walks & Talks

Jonathan Mitchell (Friends of Pewley Meadows & Pewley Down Volunteers) will lead a series of week-end talks while exploring Pewley Meadows and looking at the wonderful wildlife there. **Join us at 10am - 10.45am** to learn how to look and listen for newly arrived spring migrants and hear how the skylark residents are doing on a stroll into one of the seasonal routes in the Western Meadow (next to Pewley Way and Addison Road).



MAY 8TH, 10:30AM

Kidical Mass: a Bike Ride for Safer Streets

Come on a bike ride in support of safer streets in Guildford! Meet at 10:30am at Allen House Grounds. Find out more at www.g-bug.org/events.

MAY 30TH, 6:15PM, ZERO
Guildford Environmental Forum AGM

Our AGM, followed by talk and question-and-answer session, with further details provided to members nearer the time.



MAY 31ST, 7:30PM, ZERO

The Plight of the Bumblebee: talk by Peter Smith, Member of Guildford Bee Keeping Association, Writer and Amateur Entomologist

Honeybees are often called a threatened pollinator, when they are not under threat at all - unlike our bumblebees. We look at their fascinating world and discuss how to help them.

GUILDFORD ENVIRONMENTAL FORUM

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Guildford Environmental Forum aims to improve the environment in and around Guildford for wildlife and for people and to build a sustainable future. Join us in our work around the town and have this newsletter posted or emailed to you four times a year. Forum membership is only £10 per year or £15 for a couple, while for age 21-25 it's £5 and for under 21s it's free. New members are warmly welcomed! Please contact Adrian Thompson or Sarah Smithies with any queries.



Please send all newsletter submissions for our summer edition (articles or photographs) to Isabel Davies by May 7th at the latest!