



How will the climate and nature crises impact young people?

A briefing for charities and funders

Liz Gadd, Theo Clay, Ben Kili, Leah Davis

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Introduction

This briefing is for anyone working with children and young people in the UK from pre-birth to early employment ([0-24 years](#)). For brevity we use the phrase 'young people' throughout, unless the impacts relate to a specific age. The focus of this briefing is young people in the UK. It does not include the impact of the environmental crises and the policies to mitigate these on young people in other parts of the world, which could be far greater.

In 2021, [UNICEF](#) declared the climate crisis to be a child rights crisis. The biggest risks for young people concern air pollution, climate change, and damage to the natural environment. If you're growing up in Britain today you will be impacted in two ways – the impact now, plus the impact you will experience for the rest of your life. Your age, gender, ethnicity, and household income level will affect how you are impacted, and how severely.

Decisions over many environmental policies are devolved to the national level (Scotland, Wales, and Northern Ireland), and within England to regional Mayors (where they exist) and local authorities. Which policies are devolved, and to what level, differs across the nations and regions, so where you live will determine which policies affect you. Our upcoming policy and powers briefing will give more information on where decision making powers sit and what you need to know about the main policies.

This briefing highlights many potential challenges, which may feel daunting. But what it also highlights is that we cannot allow these challenges to be used as an excuse for inaction or to stop certain policies. Instead, it is the very reason that we should take action, and a reason to improve policies so they work better for young people. Charities, funders, and government are all well equipped to mitigate the risks to young people and introduce programmes and policies to maximise the benefits for all as we continue our transition to a post-carbon and ecologically regenerative society.

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Methodology

This briefing was informed by a rapid literature review of the impact of the climate and nature crises on young people, as well as available literature on the impact of government policies related to those areas on different groups of young people. This includes policy directly related to the environment (such as biodiversity), as well as broader policy which significantly impacts the climate and nature crises (such as housing). We focused on current UK policies, but we have also indicated the impacts of some older policies.

As this work was rapid, we did not review the methodology or findings of the research referenced in detail. In addition, some findings, particularly emerging issues, may require further investigation and/or time for the evidence base to evolve further.

The impacts identified as part of this briefing may be positive, negative, or vary on a case-by-case basis. We have judged some impacts to be negative, for example air pollution exacerbating lung conditions; and some opportunities to be positive, for example the health benefits of access to green spaces. Other issues are neither positive or negative and we have tried to simply highlight links identified without judgement. For example, links between pollution and different experiences of neurodiversity - which bring great richness to society as well as specific challenges for some individuals. We have been transparent in our findings and leave those with lived, learned, and practical experience to interpret the findings available with their greater subject expertise and within a wider context.

Climate change and air pollution

Impacts

Our climate is changing rapidly. Researchers estimate that globally, even if the pledges in the Paris Agreement are met, [children born in 2020](#) will face twice as many wildfires, 2.8 times more crop failures, 2.6 times more droughts, 2.8 times more river floods, and 6.8 times as many heatwaves during their lives than people born in 1960, negatively affecting their health, welfare and development.

Fossil fuels are the major driver of climate change and air pollution. Young people's developing bodies are [particularly vulnerable to air pollution](#) as they breathe more quickly than adults, so absorb more polluted air, and are closer to the ground where pollution is concentrated. A child is [born into dangerously polluted air every two minutes](#) in the UK.

Across the UK, [98% of Local Authorities](#) report at least one climate change hazard in their area. The top five most cited risks are: extreme heat, river flooding, urban flooding, heavy precipitation, and coastal flooding. The top five groups most affected cited by Local Authorities are: Low-income households, older people, ethnic minority communities, children and youth, and vulnerable health groups.

The most clearly evidenced impacts of our changing climate and air pollution on young people are as follows:

- **Poor birth outcomes** – Including foetal strain, pre-mature birth, and lower birth weights.
- **Physical development** – Including poor development of lungs, brain, and future fertility.
- **Mental health** – Including environmental causes of mental health issues such as depression, anxiety, schizophrenia, and [eco-compassion](#) (eco-anxiety).
- **Physical health and diseases** – Including increased risk of respiratory and cardiovascular issues, cancer, water-borne diseases such as gastroenteritis, and vector-borne diseases such as Lyme disease.
- **Education** – Including directly lowering academic performance as well as the wider disruption of missed school days.

Possible additional impacts, for which there is currently less evidence, include:

- **Health risks due to localised air pollution** – Waste management installations, including incinerators and landfill, have long been suspected to be hazardous to health, including childhood cancer and birth abnormality, but causality is hard to demonstrate.
- **Abuse** – There is evidence that high temperatures are linked to increased societal violence and that natural disasters increase risks of child abuse.
- **Infrastructure collapse** – There is early evidence that the societal infrastructure on which young people rely is poorly adapted to high temperatures and at risk of collapse in heatwaves, including public transport, medical facilities, and data centres. In the aftermath of emergencies such as flooding, essentials such as nappies and formula can be hard to access due to supply chain disruption.
- **Caring responsibilities** – As people are living longer, young people could be more likely to have caring responsibilities. As older people are likely to be affected by climate impacts such as struggling with health impacts of heatwaves and air pollution, these could impact these caring responsibilities.
- **Food insecurity** – Young people today are likely to face greater and growing food insecurity, which would have as yet insufficiently clear impacts on their health, development, and wellbeing.
- **Obesity** – There is early evidence that air pollution is a contributing factor to rising obesity rates, however this is insufficiently researched.
- **Migration** – On a global level, climate migration has already begun. In the UK we can expect to welcome more young migrants and see internal migration as young people and their families move away from areas becoming uninhabitable, for example due to coastal erosion, flooding or maybe also heat.

More detail on all these evidenced and potential impacts can be found in the Appendix.

Despite the stereotype of young people being highly activist, young people are **unprepared for climate change**. For example, there is little awareness of how to stay safe in [heatwaves](#) or [floods](#). Whilst there is undoubtedly a large group of young people who are highly concerned about the environmental crises, [research](#) shows that a significant section of young people are poorly informed. A quarter of young people aged 16-24 falsely believe that climate change is not caused by human activity, 30% say climate change is not a problem that is relevant to them, and 33% think

that the onus should be on other countries rather than the UK to play its role in addressing the problem.

Impacts of government policy

Governments at different levels in the UK have tried to respond, at least in part, to the impacts of climate change and air pollution. We have summarised the most relevant policies here, and you can find more detail in our upcoming Powers and Policy briefing.

As with the direct impacts of our changing climate and air pollution, the impact of these policies will affect young people both now and throughout their lives.

In general, policies that reduce pollution should reduce the negative impacts listed above. Likewise, the absence of these policies would likely exacerbate those impacts. We have therefore focused this section on identifying specific findings of how policies will impact young people, or where the impacts of these policies are unequal.

The policies with the greatest impacts on young people are in the following areas:

- **Renewable energy sources** – There is limited specific evidence on the impact on young people of policies to switch to renewables. However, early assessments of the UK-wide Feed-in-Tariff suggested that higher income households, including those with young people, were more likely to have solar panels installed than those living in social housing. Young people may also be impacted by the decline in fossil fuel industries as a result of the switch to renewables. Although young people proportionally make up a small, and shrinking, part of the oil and gas extraction industry, a survey of people in Aberdeen suggested that many were considering leaving the city and cited uncertainty of the oil and gas industry as a reason. However, many would stay if given other opportunities in renewable industries.
- **Insulation schemes** – schemes that aimed to reduce use of fossil-fuelled heating over the past 20 years have successfully installed insulation in homes with cavity walls and lofts. Young people living in these homes will benefit from warmer homes and/or cheaper energy bills. However, very few homes with solid walls have been insulated, and there are limited government plans to do so. Young people in low-income households and urban areas, among which people from ethnic minority backgrounds and disabled people are overly represented, are more likely to live in these uninsulated homes. However, more affluent younger people who own their own homes are more likely to live in better quality homes with better insulation than their older home-owning peers who tend to live in older homes.

- **Active travel** – Schemes to help young people walk and cycle have numerous health benefits. It is estimated that more cycling and walking could prevent over 1,000 early preventable deaths each year in England, although the majority of these are in people over the age of 50.
- **Electric vehicles** – The government in England and Wales gave £1.3bn in subsidies to help people buy electric vehicles between 2011 and 2021. Young people were less likely to benefit from these subsidies as they are less likely to drive cars in general, particularly if they are from ethnic minority groups. Surveys and analysis also suggested that those from the highest income groups are most likely to own an electric car, so young people from these groups have had the most opportunity to benefit from them. Although the Scottish government still offers subsidies, particularly for used electric vehicles, the government in England and Wales is no longer offering these subsidies, even though young people say they would be likely to switch to an electric vehicle in the next 10 years.
- **Low emission zones and emission standards** – Low emission zones either ban or charge polluting cars to enter cities, whilst vehicle emission standards limit the pollution new cars can emit. In London, young people, particularly those in low-income households and from ethnic minority communities, are benefitting most from clean air policies and restrictions on polluting vehicles, with young children born in London in 2013 potentially living an extra 5-6 months on average compared to if pollution reduction policies had not been introduced. Young people reliant on a private vehicle because of a disability or for employment (eg, delivery drivers, tradespeople, or taxi drivers) will be most greatly affected. Whilst data is limited, it is evidenced that young people make up a relatively small proportion of taxi drivers so are less directly economically affected by low emission zone charges on those vehicles compared to older taxi drivers.
- **Public transport** – Many regional leaders are calling for greater investment in buses, trams, and trains to increase provision and reduce costs. Yet there is evidence that bus services in England and Scotland are shrinking significantly. This could disadvantage young people who are not in education, employment, or training (NEET) as well as those who are in work or study but have a low income, as research shows greater help with transport costs would help them get to work, training and classes. Greater use of public transport rather than private vehicles also reduces emissions and has associated health benefits for young people (see section on low emission zones and emission standards above).
- **Fuel poverty** – Fuel poverty is estimated to have significantly increased since energy prices started to rise sharply in 2021. Policies to support people in fuel poverty have included

insulation schemes targeted at low-income groups, income support, and caps to energy bills. Families with children are at the highest risk of fuel poverty, and children are among those most at risk groups of the health impacts of living in a cold home. These include reduced resistance to respiratory infections, increased rates of asthma, and more incidences of multiple negative mental health symptoms. Educational impacts include more school days missed and difficulties in completing homework. Although there are policies to increase insulation and reduce the number of cold homes (see above) they are failing to insulate solid-walled homes, which has negative impacts on young people in these buildings.

- **Skills and education** – There are few policies to increase skills and jobs for young people in ‘green’ sectors (such as renewable energy production, sustainable agriculture, and retrofitting buildings) even though young people gain the most from policy investment in this area as they will spend longer in the labour force and are the most likely to enter new industries. Without targeted intervention, women and young people from ethnic minority groups are less likely to benefit from green jobs as fewer study STEM subjects.
- **Overall economic benefits** – The policies that would need to be introduced for the UK to meet its net zero goal by 2050 (including those for businesses) are projected to increase real disposable income, particularly for those on the lowest incomes by 2030 and 2050. Young people are therefore likely to benefit from this over their lifetimes.

More detail on these policy impacts can be found in the Appendix.

Who could gain the most?

The young people with **the most to gain** from confronting climate change and air pollution include:

- **Young people in low-income households and/or from ethnic minority groups** are more likely to be living in housing poorly adapted to our changing climate, more likely to be [disproportionately affected by air pollution](#), less likely to have access to green spaces that help to keep homes cooler, and [less likely to bounce back easily](#) after extreme weather events. Young people in urban areas are particularly vulnerable. Young people in low-income households and from ethnic minority groups will therefore benefit from better policy to improve access to green and blue spaces, housing, air quality, public transport and encourage diverse representation in green jobs, especially in urban areas.
- **Disabled young people** are more likely to be living in low-income households and facing multiple disadvantages, more likely to be [disproportionately affected by air pollution](#), as well

as facing disability specific challenges in keeping safe and well in the face of our changing climate. They will therefore benefit from improved policy to improve access to green and blue spaces, housing, air quality, and transport policy that takes account of disability specific needs.

- **Young women and girls** are slightly more likely to say they have environmental concerns and related negative emotions. Young men and boys are slightly more likely to say they are optimistic and have greater faith in the government. Young women and girls will benefit from targeted interventions to increase the diversity of those studying STEM subjects and entering related careers and as it will give them greater access to green jobs.
- **Young migrants** are more likely to face financial, housing, and food insecurity as well as being more likely to be out of education, all of which produce specific challenges in keeping safe and well in the face of our changing climate. As yet it is unclear how our immigration system, or mechanisms for supporting internally displaced young people would respond.



Our natural environment

Impacts

Alongside a changing climate, we're also damaging the natural world through our use and pollution of land, water, and habitats. Biodiversity loss (the reduction in the number of genes, individual organisms, species, and ecosystems) is rooted in human behaviours that harm species or the ecosystems they live in, including intensive farming; building on green spaces; chemicals in our farms, homes, and industries; untreated sewage in rivers and seas; plastic pollution and general overconsumption of products whose creation demands natural resources such as precious metals, water, or agricultural products. All these issues also affect young people directly. For example, [young people are more vulnerable to toxic chemicals](#) as bodies are developing and young people require more food and water per unit of body weight than adults, so contaminated food or water can have a [much greater impact](#) than in adults.

The most clearly evidenced impacts on young people of declining nature are:

- **Poor birth outcomes** – Including the impact of toxic chemicals on miscarriage, stillbirth, and low birth weights.
- **Diseases** – Including exposure to toxic chemicals increasing risk of cancers and kidney disease; lack of access to green space affecting lung function; intensive farming increasing risk of diseases such as e-coli and salmonella; and damage caused by intensive farming alongside wider human damage to ecosystems increasing the risk of zoonotic diseases (diseases that jump from animals to humans) such as Covid-19.
- **Physical development** – Including toxic chemicals' impact on brain development and later fertility.
- **Access to green space** – Which is shown to improve birth outcomes, immunity, physical health, physical development, mental health, social skills, academic performance, resilience, and confidence.
- **Nutritional quality of food** – Which is being reduced by intensive farming practises and declining soil health, and can lead to birth defects, impairment of physical development, and lower academic performance.

Possible additional impacts, for which there is currently less evidence, include:

- **Health risks due to land and water pollution** – Some young people may be at greater risk because of land and water pollution where they live or play. For example, young people are at greater risk of health impacts from contact with untreated wastewater in rivers, seas or urban overflow following heavy rain.
- **Health risks related to plastic** – Microplastic waste is composed of toxic chemicals and can also host bacteria, both of which children and young people are particularly vulnerable to if ingested. Microplastics have been found in breastmilk and food. Early evidence suggests pre/post-natal exposure to microplastic is a potential risk factor for male infertility and although not a health risk, is also linked to autism. Research is limited; however, children are more exposed to microplastics than adults, including via baby bottles, toys, food packaging and textiles.

Impacts of government policy

As with climate change and air pollution, governments at different levels in the UK have tried to respond, at least in part, to the impacts listed above. We have summarised the most relevant policies below.

There are short-term and long-term impacts on young people of policies to reduce nature's decline. We found fewer examples of policies to improve our natural environment compared to those that aim to reduce emissions, and even less evidence of the positive or negative impacts on young people – or indeed the broader population.

The areas where we assessed there **could be the greatest policy impacts** on young people are:

- **Access to green space** – Policies to increase the amount and quality of green space, and access to it, is determined by national planning policies that are implemented locally, as well as specific local policies and programmes. We found little evaluation of these policies and their impacts on young people. However, under recent policies, the total proportion of urban greenspace in England has declined, as has the quality. As young people are more likely to live in urban areas, they are more likely to lose out through this, particularly young people from ethnic minority groups and lower income households. Policies to create more green spaces in urban neighbourhoods can bring greater benefits to people from disadvantaged groups.

- **Water and land pollution** – The main policies to reduce pollution of land and water are regulations on water companies, industries, and agriculture to limit the amount of sewage, chemicals and agricultural products that are allowed to enter rivers, seas, and the land. We found little analysis of the impact of these policies on people as part of this review.
- **Food policies** – Policies related to food focus on reducing the environmental harm of farming on the natural environment. We found little evidence of the impact of these policies on young people, including the quality of food produced. What we do know, is due to the amount of time that they will be alive, young people are more likely to benefit from eating less meat and dairy, although we found no direct policies to promote this.

Who could gain the most?

The groups of **young people with the most to gain** from positive nature action are those from:

- **Low-income households** – Less likely to have access to nature and more likely to be exposed to toxic chemicals through cheaper food and other goods. Young people in urban areas are particularly likely to experience nature poverty and will therefore benefit from targeted policies providing greater access to green spaces.
- **Ethnic minority communities** – Less likely to have access to nature and more likely to be exposed to toxic chemicals through a range of household products, food and their local environment. Young people in ethnic minority communities are more likely to live in urban areas and could therefore benefit most from policies providing greater access to green spaces.



Where we need more evidence and information

As this was a rapid evidence review, there will undoubtedly be evidence we have not included. However, in some cases, the gaps in evidence and information on the impact of the climate and nature crisis seem clear – such as limited information on the impacts of toxic chemicals and waste. In other cases, the challenge is that we simply do not yet know what the longer-term effects will be.

There are also several policy areas where there is very little evidence on the impact of policies on young people, or at least little that is accessible. This includes policies focused on:

- **Climate adaptation** – Including policies on flooding and coastal defences, overheating, water supply and drought.
- **Restoring nature** – including policies on farming and food, water and land pollution, access to green space and biodiversity.

Overall, we found few evaluations of government policies on climate or nature. Where these exist, mentions of young people, or even people, were often no more than a few sentences. This is a significant gap.

We also found limited evidence on the age of young people that would be most negatively or positively impacted.

This review did not consider the impacts of environmental change and UK policies on young people outside of the UK. Policies that 'offshore' production of goods consumed in the UK (and associated emissions); encourage technologies that rely on precious metals mined in other countries; rely on other countries to process and dispose of waste; rely on other countries to grow food that people in the UK consume – could all have significant impacts on young people in those countries and should be considered alongside the impacts highlighted in this briefing. Young people with relatives overseas may see family members even more adversely affected than their UK-based family.

Conclusions

Young people will be affected by the climate and nature crises more than others because a) their developing minds and bodies are particularly vulnerable to mental or physical health issues, and b) because they will live to see more of the environmental changes and related policy impacts.

There appears to be the greatest body of evidence of the negative impact of the environmental crises on young people's physical and mental health. However, we also found evidence of the impact of the crises on their education, development, and income.

There are indications that effective policies, although not currently in place in some areas, could reduce these negative impacts.

However, our evidence review has shown that not all young people will be affected equally:

- **Young people from low-income households are worst affected.** They are disproportionately exposed to air pollution and toxic chemicals; more likely to live in poorly adapted housing that leaves them particularly vulnerable to our changing climate; less likely to have access to green spaces and be less likely to bounce back easily after extreme weather events. This group of young people have the most to gain from policy to improve housing, air quality, public transport and to address the financial implications of the transition to a post-carbon economy.
- **Young people from ethnic minority groups** are disproportionately represented in low-income households and will therefore be more affected. In addition, this group is less likely than their white peers to access green spaces or green jobs. Young people from ethnic minority groups will particularly benefit from policies to improve housing, air quality, public transport, and encourage diverse representation in green jobs and related training programmes.
- **Disabled young people**, like those from ethnic minority backgrounds, are more likely to live in low-income households and will therefore be more affected. They will also benefit from policies to improve housing, air quality and public transport.
- **Young people in urban areas** will particularly benefit from policies to improve housing and air quality, public transport, and active travel.

- **Young women and girls** will benefit from policies that address the lower representation of females in STEM related education and training that leads to careers in green jobs.
- **Young migrants**, including those arriving in the UK because of climate migration and those internally displaced by uninhabitable homes, may face financial, housing, and food insecurity as well as being more likely to be out of education, all of which produce specific challenges in keeping safe and well in the face of our changing climate.

There are gaps in research, understanding and policy – especially around climate adaptation and restoring nature – that must be addressed to ensure positive health, welfare, and developmental outcomes for all young people now and in future generations.

Who needs to act now?

Whilst policy makers have a key role to play, young people and the organisations supporting them have significant agency. We recommend to organisations supporting young people, including charities and funders, that their response should move beyond greening their operations. The impact of the climate and nature crises on young people will impact their mission and programmes and that is where they can make the greatest impact. As such, we encourage charities and funders to discuss the content of this briefing with their programme, strategy, and policy teams as well as senior management and trustees.

Our next set of briefings will highlight the policies that young people would like to see government introduce, and the actions they would like charities and other organisations to take.



The Everyone's Environment Programme

This briefing was developed as part of the NPC-coordinated [Everyone's Environment](#) programme, a collaboration of over 40 social and environmental charities and funders to empower people from different social groups to have their needs reflected in environmental decision making and policy. We will publish similar briefings on other social groups in the UK, for example ethnic minority groups, disabled people, and older people. To get involved in the programme please [get in touch](#). Stay up to date with related publications and events by signing up to [NPC's newsletter](#).

The global recognition of the need to change how we engage with the natural environment makes this one of the greatest opportunities to reimagine and create a society that humanity has ever had. Transitioning to a post-carbon and nature friendly economy offers a new opportunity for funders and charities to address longstanding inequalities. We can build a fairer society where we heal the damage done to our environment and strengthen our communities in the process; where charities and funders empower different social groups to shape society's response to the environmental crises; and where together we find solutions that improve life for all sections of society whilst protecting and restoring our environment.

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Appendix: Detailed findings

This briefing was compiled in early 2023 based on the following research. More research is emerging all the time.

Climate change and air pollution direct impacts

Impact	Evidence	Level
Poor birth outcomes	<ul style="list-style-type: none"> Increased temperatures and heatwaves are linked to: foetal strain, early labour and lower birth weights, particularly for lower socio-economic groups; sudden infant death syndrome (SIDS) / cot death; bacterial intestinal infections; dehydration and heatstroke. Black carbon particles even cross the placenta into babies before birth. High exposure to air pollution increases the risk of Preterm birth, Stillbirth and Low Birth Weight with those near busy roads most vulnerable. People born preterm are at high risk of an extensive range of lifelong health issues. 	Evidenced
Physical development	<ul style="list-style-type: none"> Air pollution is reaching children, and affecting development, from as early as the first trimester of pregnancy affecting future fertility and can affect brain development for at least the first 8.5 years of their life. Exposure to air pollution within the first six months of life alters a young person's microbiome, increasing the risk for allergies, diabetes, obesity, and brain development. Exposure to air pollution affects the development of lung capacity through to adulthood; neurodevelopment and cognitive ability; and can impair growth ('stunting') although the UK experience of this is under-researched. 	Evidenced
Mental health	<ul style="list-style-type: none"> There is a clear link between increased temperature and increased mental health issues. Children and young people are particularly vulnerable to experiencing trauma as a result of flooding as toys, networks, home and school are disrupted. Severe flooding can trigger post-traumatic stress disorder, anxiety and depression, phobias and panic, sleep disorders, cognitive deficits and intellectual disabilities with studies showing that teenagers are particularly vulnerable. Exposure to flooding causes significant disruption to young people's lives at home, at school and in their community during crisis response and recovery. 	Evidenced

	<ul style="list-style-type: none"> • Air pollution is linked to schizophrenia and other psychotic disorders; and poor mental health by the age of 18. Exposure to air pollution in adolescence is a risk factor for depression. • 6 in 10 young people are 'very or extremely worried about climate change', and 4 in 10 are hesitant to have children because of it. Young people also experience anger, frustration, depression, sadness, grief, anxiety and a sense of powerlessness about its impact on their lives. • A survey by the Royal College of Psychiatrists found that 57% of child and adolescent psychiatrists reported seeing children and young people distressed about the climate crisis and the state of the environment. • Growing rates of ecoanxiety (severe and debilitating worry) and ecological grief (grief related to current or anticipated ecological loss), despite being uncomfortable and, in extreme cases, debilitating, should be recognised as based on a rational understanding of the climate science, and should not be regarded as unreasonable, illogical, or pathological. • Young people's feelings and hopes are often neglected in policymaking and research, which impacts their wellbeing and the quality of our response to the climate crisis. • Climate anxiety can, in some ways, be seen as a good thing as it's been linked to greater climate action. 	
<p>Physical health and diseases</p>	<ul style="list-style-type: none"> • Babies, children, and teenagers are more at risk of heat stress than adults because they weigh less, absorb heat more rapidly, produce more heat when active, sweat less, and can lose body fluid quickly. • Lower temperatures, particularly in the home, are linked to increased respiratory diseases in young people and those in low-income families are most at risk. • Wildfires, that often accompany heatwaves, are linked to air pollution that causes a range of health issues, including respiratory and cardiovascular problems and can increase warming of the atmosphere. • Young people are more susceptible than adults to many of the diseases that will increase with climate change. For example, babies and children are highly susceptible to waterborne diseases and pathogens that emerge because of floods and contamination of water supplies. • Lyme Disease, the most common vector-borne disease in the UK, is becoming more common in northern climates due to climate change. Young people under 16 years are most at risk. • Pandemics caused by zoonotic diseases such as Covid-19 can cause widespread societal and financial disruption, affecting development opportunities. Climate change increases the chances of another pandemic like Covid-19. Air pollution increases risk of childhood cancer and diseases later in life. 	<p>Evidenced</p>

	<ul style="list-style-type: none"> • Adolescents living in areas with high levels of air pollution are more likely to have high blood pressure, putting them at greater risk of heart problems in adulthood. Young girls are particularly vulnerable. • Exposure to air pollution in infants under one year old or in the womb, increases the chances of developing childhood asthma by 20% and adult asthma by about 10%. • Inequality in exposure to air pollution in London has been decreasing since 2013 between different ethnic groups, although non-white children are still more likely to suffer respiratory illness such as asthma. They are also more likely to be worst affected by the health effects of air pollution. • Young people living in communities close to fracking or mining activity may be susceptible to health risks of respiratory disease and cancer. • Young refugees are particularly vulnerable to respiratory, gastrointestinal, and skin infections because of poor living conditions, suboptimal hygiene facilities, and deprivation. 	
Education	<ul style="list-style-type: none"> • Education can be disrupted by heatwaves if schools close buildings unable to cope with high temperatures or parents keep students at home. • Academic performance is lower during heatwaves, particularly in low-income areas. • There is very little research on the long-term impacts of heat exposure in childhood, however there is indication that those exposed to extreme heat in the early years may go on to complete fewer years of education than they would have otherwise. • Increased exposure to air pollution during infancy can reduce reading and maths abilities, for some this equates to losing an entire month of school. • Children and young people are exposed to air pollution at school. One study showed 98% of English state schools in London and 24% outside London are in areas breaching World Health Organization air pollution limits. Another study showed 65 percent of UK schools exceed safe air pollution levels. • Young refugees are five times more likely to be out of school than peers and therefore more climate induced migration may see greater loss of access to education. 	Evidenced
Localised air pollution	<ul style="list-style-type: none"> • Waste management installations, including incinerators and landfill facilities, have long been suspected to be hazardous to health, however causality has been challenging to demonstrate. They are linked to childhood cancers and birth abnormalities. 	Emergent
Abuse	<ul style="list-style-type: none"> • Rates of child abuse can increase during natural disasters such as hurricanes, wildfires, and pandemics. 	Emergent

	<ul style="list-style-type: none"> • Periods of isolation and lockdown in response to pandemics can heighten risks of child abuse and access to support. • Young refugees are particularly vulnerable to exploitation and abuse. 	
Infrastructure collapse	<ul style="list-style-type: none"> • Increased temperatures put strain on infrastructure that can affect children and young people’s health, wellbeing, and education – from transport and data centres to medical facilities. 	Emergent
Caring responsibilities	<ul style="list-style-type: none"> • Older people, aging parents and grandparents are particularly vulnerable to our changing climate. An aging population will bring an additional care burden to young people across the country. 	Emergent
Food insecurity	<ul style="list-style-type: none"> • Current estimates suggest children born in 2020 will face on average 2.8 times more crop failures during their lives than people born in 1960. DEFRA and the House of Lords recognise that without significant adaptation, today’s children and young people will face increasing food insecurity and prices as adults. • Food insecurity prevents young people from reaching their full physical, cognitive, and psychosocial potential. • People in food insecure households rely heavily on health services. Young people from food insecure households are more likely to grow into obese adults and have lifelong dental problems. 	Emergent
Obesity	<ul style="list-style-type: none"> • Air pollution exposure is linked to child obesity. 	Emergent
Migration	<ul style="list-style-type: none"> • A child born today is born into a world in which over a billion people will likely be displaced by sea level rise alone during their lifetime, and billions more due to rising temperatures. • The UK is likely to welcome increasing numbers of climate refugees. At present, most migrants are young adults while only one in eight migrants and half of the world’s refugees are minors. But as the impacts of climate change intensify many more young people will be forced to migrate, particularly in the global south. • Whilst diversity brings great richness to communities many, including the United Nations, are concerned that the forced movement of larger numbers of people around the world will increase the potential for conflict and insecurity. With hundreds of lawyers urging action for the sake of our children and young people. 	Emergent

Impacts of policies on climate change and air pollution

Policy area	Evidence	Level
Renewables and solar	<p>Main policies: Policies to increase renewables include the Renewable Heat Incentive and the Boiler Upgrade Scheme (for example, for heat pumps), and the Feed-in-Tariff and Smart Export Guarantee (for solar). These have successfully increased the amount of renewables, with for example over 800,000 domestic solar installations made under the Feed-in-Tariff. However, policies to increase renewable heat technologies have so far been less successful.</p> <p>Impacts:</p> <ul style="list-style-type: none"> The rising price of fossil fuel generation means more renewable energy generation should benefit all age groups, particularly those on lower incomes who are more likely to be young and for whom the effective rate of inflation is highest. There is limited evidence on the impact of policies to increase solar panels and renewables heat technologies like heat pumps. Early figures from the Feed-in-Tariff scheme for solar panels indicated that although there were installations in social housing, people who could afford the upfront cost of solar panels would be most likely to benefit. Young people living in higher income households were therefore more likely to benefit. Although young people proportionally make up a small, and shrinking, part of the oil and gas extraction industry, a survey of people between 16 and 35 in Aberdeen in 2016 suggested that many were considering leaving the city and cited uncertainty of the oil and gas industry as a reason. However it is worth noting that just over half of fossil fuel workers would be interested in transferring across to renewable or offshore wind roles, and around 7/10 have transferable skills which could facilitate a move. 	Limited evidence
Insulation	<p>Main policies: Insulation schemes to date have focused on insulating lofts and cavity walls, with 70% of walls and 66% of lofts insulated. However, out of the over 8 million homes in Great Britain that have leaky solid walls, only around 9% have been insulated. Policies for Zero Carbon Homes which would have increased insulation (and installed solar panels and heat pumps) in new-build homes was scrapped in 2015 in England and the Future Homes Standard won't be reinstated until 2025. Although new social housing in Wales is zero carbon, private housing won't meet the standard until 2025. And in Scotland it will be zero carbon from 2024.</p> <p>Impacts</p> <ul style="list-style-type: none"> Young people from low income and ethnic minority groups, as well as disabled young people, are more likely to be privately renting and more likely to be renting in cities—where homes are more likely to have solid walls. 40% of homes (64% in London) have poor quality walls which cost residents an extra £350 over winter in 2023. 	Well evidenced

	<ul style="list-style-type: none"> • ‘Leaky’ homes, which lose heat easily, are concentrated in poorer neighbourhoods, and use an average of 58% more energy than homes that meet the government’s standards. • Although more affluent younger people who own their own homes are more likely to live in homes with better insulation than their older home-owning peers, if they do need to pay for expensive insulation, they will be less able to pay for the upfront costs due to the comparatively smaller amounts of equity they have than their older peers. This is particularly true for young people from ethnic minority groups, who on average have less savings than their white peers. • Young people in poorly insulated homes are more likely to experience health issues associated with mould and damp. Around 120,000 social housing homes, and around 176,000 privately rented homes, suffer from damp and mould—an estimated three times the number of privately owned homes. 	
<p>Active travel</p>	<p>Main policies: Policies to increase active travel include more and segregated cycle paths, subsidies for bikes, better signs for walking, and spatial plans for new homes and communities that make walking and cycling easier.</p> <p>Impacts:</p> <ul style="list-style-type: none"> • Cycling and walking have numerous health benefits including reducing the risk of cardiovascular disease, type 2 diabetes, cancer, and depression and could lead to a reduction in early preventable deaths of over 1,000 per year in England, mostly among the over 50s. 	<p>Limited evidence</p>
<p>Electric vehicles</p>	<p>Main policies: Up until 2022, the UK government offered a grant to buy electric cars worth around £1.3billion, creating demand for an estimated 90,000 electric vehicles between 2011 and November 2021.</p> <p>Impacts:</p> <ul style="list-style-type: none"> • Young people (17-29 years) have steadily become less dependent on driving since the 1990s due to changes in socio-economic situations so are less likely to benefit from subsidies that support electric vehicles. This is particularly the case for young people from an ethnic minority background who are less likely to own a car than their white peers. • A 2021 survey conducted by Statista found that people with higher incomes are more likely to own an electric vehicle than people on the lowest incomes. A government-commissioned evaluation of electric vehicle subsidies suggested that high income households were far more likely to own electric vehicles. If these people also claimed government subsidies, that could indicate people, including young people, from higher incomes are more likely to receive these subsidies. • However, a 2021 ONS survey suggested that over 50% of people between the ages of 16 and 29 would be likely to switch to an electric vehicle in the next 10 years. 	<p>Well evidenced</p>

<p>Low emissions zones and emission standards</p>	<p>Main policies: Several cities in England have introduced low emission zones that either ban or charge polluting cars to enter cities, including London, Birmingham, and Bristol. Scottish cities including Glasgow, Aberdeen and Dundee will enforce them soon. In addition, the UK has had carbon dioxide emission standards for new cars since 2009 and air pollutant standards for new cars since 1992 which gradually lower the amount of pollution new cars can emit.</p> <p>Impacts</p> <ul style="list-style-type: none"> • Young children born in London in 2013 may live an extra 5-6 months on average due to the introduction of pollution reduction policies introduced since then, compared to if they had not been introduced (including emissions standards). • In London there is still a strong correlation between areas of higher economic deprivation and higher levels of air pollution. Policies such as London’s Ultra Low Emission Zone (ULEZ) have helped to bring down overall levels of nitrogen dioxide, but pollution remains disproportionately higher in more economically deprived areas. • Only 10% of taxi drivers in England were below the age of 35 in 2022, so their incomes are less likely to be affected by low emission zone charges. • Young people on low incomes or with disabilities who do drive polluting cars are more likely to benefit from scrappage schemes associated with low emissions zones, such as a new £110 million scheme in London. 	<p>Well evidenced</p>
<p>Public transport</p>	<p>Main policies: Policies to increase public transport include expanding bus, tram and train services or increasing the frequency of them. These services and policies vary considerable between regions. In both Scotland and England, outside of London, passenger journeys on local buses have fallen since the late 2000s and have not yet recovered after a significant fall during the Covid-19 pandemic.</p> <p>Impacts</p> <ul style="list-style-type: none"> • Access to affordable public transport is most critical for young people in low-income households and high public transport costs can be a barrier to education. A third of young people who were not in education, employment, or training (NEET) or in unskilled jobs said they would have engaged in work or training if they had received help with covering transport costs. • A NatCen evidence review to the Department of Public Transport in 2019 found students in higher education from low-income households attend fewer classes due to transportation costs. 	<p>Some evidence</p>
<p>Fuel poverty</p>	<p>Main policies: The definition of fuel poverty varies but it refers to households that must spend a high proportion of their income to keep their home at a reasonable temperature. Policies to support those in fuel poverty have included insulation schemes, income support and reductions in energy bills. Of these policies, those aimed at increasing insulation levels are most closely related to reducing carbon emissions. It is estimated there has been a significant increase in the number of people experiencing fuel poverty in the UK since energy prices started to increase in 2021.</p>	<p>Well evidenced</p>

	<p>Impacts</p> <ul style="list-style-type: none"> • Children are one of the most at-risk groups from fuel poverty and households with children have the highest rates of fuel poverty. • Physical health effects on children living in cold homes include babies needing more calories for growth, reduced resistance to respiratory infections, increased circulation of viruses, and increased rates of asthma. • An English study showed that rates of respiratory illness were over twice as high in children who had lived in cold, damp homes in the previous three years compared with those who had not. • In England, 28 per cent of young people living in cold homes were found to have four or more negative mental health symptoms, compared with 4 per cent of young people who had always lived in warm homes. • UK children miss more school days due to disease burden from damp than any EU member state, with rates over 80 per cent higher than the EU average. • As well as missing days in school, it is much more difficult for children to do homework and study in a cold home where households crowd into one or two heated rooms. • In Scotland, analysis shows that households headed by young people (16-24) are more at risk of fuel poverty. As a result, Scotland has targeted families with lone parents, young mothers, ethnic minority families, and young children, for support including winter benefits payments and increasing insulation. • Young people (25-34) are more likely to be on pre-payment meters and face higher unit prices for energy, so they cannot smooth their energy costs over the whole year unlike direct debit payments. 	
<p>Skills</p>	<p>Main policies: Scotland has a number of policies to increase green skills and jobs (such as renewable energy production, sustainable agriculture and retrofitting buildings) and Wales has also published a plan to increase green jobs and skills. But in England there are few policies, mainly focused on apprenticeships. All nations have policies to teach about climate change in schools.</p> <p>Impacts</p> <ul style="list-style-type: none"> • Young people would be most likely to be employed in renewable industries, which could create 1.6m jobs in the UK, including 134,000 in Scotland. • Women and young people from ethnic minority groups are less likely to go into green jobs. Policies to tackle this include the Green Apprenticeships Advisory Panel and schemes like the government's £2 billion Kickstart for young people furthest from the labour market. These schemes are small and need more investment to have widespread take-up. 	<p>Limited evidence</p>

	<ul style="list-style-type: none"> The Committee on Climate Change notes that further analysis is needed on what jobs are needed, which sectors need to grow, which sectors are at risk and which workers likely to lose out. 	
Overall economic costs	<p>Main policies and impact: The overall package of policies that would need to be introduced for the UK to meet its net zero goal by 2050 (including those for businesses) are projected to increase real disposable income, particularly for those on the lowest incomes by 2030 and 2050.</p>	Limited evidence

Natural environment impacts

Impact	Evidence	Level
Poor birth outcomes	<ul style="list-style-type: none"> Exposure to toxic chemicals is linked to: miscarriage, stillbirths, low birth weights, birth defects; asthma and immune system impairment Women’s exposure to ‘forever chemicals’ (PFAS) during early pregnancy could result in their children having a lower sperm count and quality later in life. 	Evidenced
Physical health and diseases	<ul style="list-style-type: none"> Exposure to toxic chemicals is linked to cancers and kidney disease Environmentally damaging intensive farming is linked to spread of disease including E.coli, salmonella, Bovine Leukaemia, zoonotic diseases such as different strains of flu, as well as contributing to increasing antibiotic resistance. 	Evidenced
Physical development	<ul style="list-style-type: none"> Exposure to toxic chemicals is linked to early puberty and the risk that children today may develop dementia earlier. Pesticide exposure during pregnancy increases likelihood of autism spectrum disorder (ASD) and attention deficit/hyperactive disorder (ADHD). There are likely developmental periods when the endocrine, reproductive, immune, visual, or nervous systems are particularly vulnerable however research appears limited. Brain development is affected by an extensive list of toxic chemicals. For example, there are links to autism, ADHD, learning disabilities, aggression, and depression. 	Evidenced
Access to green space	<ul style="list-style-type: none"> Access to nature is linked to: healthier birth weights; healthier immune systems; healthier lungs; reduced symptoms of ADHD; lower risk of childhood obesity, which in turn reduces risk of health issues in later life such as coronary heart disease, hypertension, type 2 diabetes, stroke, respiratory problems, and some cancers. Frequency of visits to green spaces and views of green space from the home are significant predictors of general health. Access to nature, and even hearing birdsong, improves physical and mental health. 	Evidenced

	<ul style="list-style-type: none"> • Access to nature leads to health benefits including lower risk of myopia (short sightedness) or hypermetropia (long sightedness) in children; improved social skills and relationships and increases in physical activity, benefitting cardiovascular health. • Access to nature is linked to: greater academic success; greater cognitive ability; better concentration; better memory as well as improved self-esteem, resilience, self-confidence and trusting relationships. • Educational activities based outside the classroom and in nature, improve students' attainment in reading, mathematics, science, social studies, physical education and drama, along with a greater motivation for studying science and increased educational attendance rates overall. • Moving nearer to parks during the first 10 years of life improves children's lung function compared with those living further away even after taking into account variations in exercise and air pollution exposure. • Early experiences of nature affect lifelong environmental attitudes and values, leading to concern that 'de-natured' young people may be less likely to protect and care for the environment. • Time spent near 'blue spaces' – rivers, lakes and coasts – in childhood is linked to increased wellbeing as adults. • Young people are spending less time in nature. • Those from low-income households and ethnic minority groups are less likely to have access to nature. • Green school playgrounds improve wellbeing and reduce physiological stress. • Green spaces are linked to increased social capital, reduced crime rates, reduced violence, and increased community cohesion. 	
<p>Nutritional quality of food</p>	<ul style="list-style-type: none"> • We are all exposed to toxic chemicals through the food we eat, and the impacts are as yet insufficiently understood. Exposure begins in the womb, with highly hazardous pesticides having been found in the urine of pregnant women. • Nutrients in our food are being reduced by rising CO2 levels, poor soil health and intensive farming practices. • Nutrient deficiencies impact general health, increase vulnerability to infectious diseases and higher the likelihood of poor adult health. Nutritional deficiencies increase susceptibility to birth defects, blindness, reduced growth, cognitive impairment, decrease school performance. Adolescent girls and young children are particularly susceptible to the effects of poor nutrition due to higher requirements. • Children on vegan diets have healthier hearts and less body fat, but the diets may affect growth, bone mineral content and nutritional intake. Low meat diets have proven health benefits. Whether vegetarian and vegan diets are appropriate for children is an unresolved controversy. The more restrictive the diet and the younger 	<p>Evidenced</p>

	<p>the child, the greater the risk of nutritional deficiency. Whilst plant rich diets are healthy, processed foods in all its forms, including plant-based alternatives are less healthy.</p> <ul style="list-style-type: none"> • Food security and the cost of family food bills are increasingly affected by the environmental crises. 	
<p>Health risks due to land and water pollution</p>	<ul style="list-style-type: none"> • Children are at greater risk of health impacts from contact with untreated wastewater in rivers, seas or urban overflow following heavy rain. 	<p>Emergent</p>
<p>Health risks related to plastic</p>	<ul style="list-style-type: none"> • Microplastic waste is composed of toxic chemicals and can host bacteria, both of which children and young people are particularly vulnerable to if ingested. Microplastics have even been found in breastmilk and in the bloodstream. • Pre/post-natal exposure to microplastic is a potential risk factor for male infertility. And is also linked to autism spectrum disorder. • Research is limited; however, children are more exposed to microplastics than adults, including via baby bottles, toys, food packaging and textiles. Whilst buying second hand is good for the environment and household budgets, it can increase risk of exposure to toxic chemicals now more tightly regulated. • Microplastics are also infiltrating the food we eat. 	<p>Emergent</p>

Impacts of policies on the natural environment

Policy area	Evidence	Level
Green spaces	<p>Main policies: Policies to increase the amount, quality, and access to, green spaces for people include designing green spaces into new housing developments, adding new green spaces into existing areas where people live, increasing the biodiversity of existing green spaces, and schemes to encourage more people to go to green spaces and the countryside. These are largely governed by national planning policies implemented locally, or through specific local policies. The proportion of urban green spaces are declining in England, from 63% to 55% between 2001 and 2018, and the quality of Sites of Special Scientific Interest is poor.</p> <p>Impacts:</p> <ul style="list-style-type: none"> • Policies to create more green spaces in urban neighbourhoods bring disproportionate benefit to those from disadvantaged groups, and economic related inequalities in health are lower in areas with access to greenspace. • Evidence shows that local authorities working with local communities to develop plans for green space will help stimulate physical activity in communities. 	Limited evidence
Water and land pollution	<p>Main policies: The main policies to reduce pollution of land and water are regulations on water companies, industries, and agriculture to limit the amount of sewage, chemical, and agricultural products that enter rivers, seas, and the land. Since the 1990s these have led to a reduction in water pollution in England. However, there were over 14,000 discharges of sewage into Scottish rivers in 2022 and 300,000 discharges of sewage into rivers and seas per year in England. Agriculture continues to be a major source of the pollution. Rivers and waterways in Scotland, Wales and Northern Ireland's are less polluted than those in England.</p> <p>Impacts: We found little analysis of the impact of these policies on people.</p>	Very limited evidence
Food and farming	<p>Main policies: The main policies related to food focus on reducing the environmental harm of farming on the natural environment. Up until the UK left the European Union, this was governed across the UK by the Common Agricultural Policy but is now governed by the Environmental Land Management Schemes.</p> <p>Impacts:</p> <ul style="list-style-type: none"> • We could find little evidence of the impact of these policies and the quality of food they produced on young people. • Young people are most likely to experience any health benefits which come from policies to reduce excessive food or meat consumption. However, despite original drafts of the Food Strategy including recommendations to cut meat and dairy consumption by 30%, these were cut from the final strategy. 	Very limited evidence