Healthcare for planets and humans: why looking after nature is good for mind, body, and the NHS

It’s an honour to be here, virtually at least, as a guest of the UCL Institute for Sustainable Resources. Good leaders admit vulnerability, so let me start by saying I feel a little outgunned.

UCL is one of the best universities in the world, and this year’s QS World University Rankings places The Bartlett, UCL’s faculty of the built environment, as number 1 in the UK for Architecture/Built Environment studies and third in the whole world. I am also very conscious that after my speech I will be followed by Professor Joanna Chataway who has particularly deep expertise in many of the things I am going to talk about – health, justice and public policy.

All I have is a bit of practitioner’s knowledge and a personal commitment to the Environment Agency’s purpose: creating a better place. So if you are hoping for a brilliant academic discourse from me, look away now.

I have three messages today:

Message one: a healthy environment means healthy humans, and an unhealthy environment means unhealthy humans. This sounds obvious, but it is only now that we are starting to see the detailed evidence to back this up. Today the Environment Agency publishes a report which adds to that body of evidence and helps us understand better how the environment affects human health and wellbeing.

Message two: investing in a healthy environment is about the smartest thing we can do. It makes medical sense, because it will mean better health for all and less strain on the NHS. It makes economic sense, because it will save the NHS billions of pounds: the NHS could save an estimated £2.1bn every year in treatment costs if everyone in England had access to good quality green space. And it makes social sense, because those who live in poor environments are also those who have the worst health and the lowest incomes: levelling up the environment will also help level up everything else.

Message three: the Environment Agency is not the National Health Service and does not claim to be. But in doing what we do – protecting and enhancing the environment – we are also providing a national health service. The State of the Environment Report: headlines

Let me start with the report the EA is publishing today. It’s called The State of the Environment: Health, People and the Environment – and it does exactly what it says on the tin. The main findings are that:

- Air pollution is the single biggest environmental threat to health in

the UK, shortening tens of thousands of lives each year.
- Environmental factors – pollution, flooding, climate change – are contributing to the increase in mental health conditions we are seeing.
- Exposure to pollution and access to nature are not equally distributed across society – people living in deprived areas often have poorer quality environments with less accessible green space. They also have worse health. There is a link.
- On the upside, there is substantial and growing evidence that everyone's physical and mental health benefits from a good environment. Put simply: if we look after nature, it will look after us.

The report starts by identifying the main factors which determine our health: they include the specific characteristics we each have as individuals (age, sex, hereditary factors etc), our lifestyle, the community to which we belong, the local economy, the built environment in which we live and work, the natural environment around us, and at the largest scale – but still affecting our health – the global ecosystem.

Let's start with the good news. The overall quality of the environment in which we live in this country is much better than it was a few decades ago. That is largely due to stronger laws, a cleaner economy, better policies, popular demand and effective regulation – much of it by the Environment Agency.

So, for example:

- Our air is much cleaner than it was. Emissions of some of the worst air pollutants have been massively reduced. Between 1970 and 2017 sulphur oxides (SOx) emissions have decreased by 97%, particulate matter (PM10) by 73%, fine particulate matter (PM2.5) by 79%, and nitrogen oxides (NOx) by 73%. In 1952 thousands of people in London died as a result of the so-called Great Smog – the smoky fog which led to the Clean Air Act banning smoke pollution. Most Londoners today have never even heard of smog – which shows you have far we have come.

- Our water is cleaner: over recent decades the quality of water in England's rivers and lakes has generally improved, though there is a lot more to do; and on our coastlines the quality of bathing water has dramatically improved.

- Land that was once heavily polluted by heavy industrial processes has been remediated. Green grass grows where slag heaps sat.

- We are less exposed to some of the most dangerous chemicals, such as the highly toxic dioxins. Dioxin levels in human milk have been declining over recent decades as a result of better regulation and cleaner technologies.

Moreover, everyone in this country now has decent sanitation and safe drinking water. Taken together with the huge advances over the last few decades in medicine and healthcare, the net effect has been a dramatic improvement in most people's health, wellbeing and life expectancy.

The bad news: other risks are rising

One of the lessons I learned when I lived in India is that things are never as bad or as good as they seem. So let's get to the bad news, which is that the great progress on the issues I've identified has thrown other risks, old and new, into sharper relief:

Air: despite all the progress since the 1950s, air pollution is now the single greatest environmental threat to health in the UK. Long-term exposure to air pollutants still shortens tens of thousands of lives every year and reduces average life expectancy by several months. An estimated 5% of total mortality in England can be attributed to fine particulate matter (PM2.5) alone.

Noise: it causes the second highest pollution-related burden of disease in Western Europe. It is responsible for more life years lost than physical pollutants such as lead, ozone and dioxins. Noise pollution has been linked to coronary heart disease, dementia, diabetes and obesity. The main source is road traffic: 11.5m people in England are exposed to traffic volume exceeding WHO guidelines.

Odour: the bad smells which sometimes come from farming, industry and waste management aren't just unpleasant and harmful to quality of life. Communities affected by odour also experience higher levels of anxiety and stress-related illness.

Flooding: thankfully today there are relatively few injuries or deaths related to flooding in England. The EA's flood defences and flood warnings keep most people safe most of the time. But flooding can still have serious health effects. Being flooded affects your physical health: there are higher levels of shock, respiratory infections, high blood pressure and stomach upsets in those who have experienced it. But the biggest of all effects is on your mental health: depression, anxiety and post-traumatic stress disorder are significantly higher in people who have experienced a flood.

Bottom line: the World Health Organisation estimates that environmental factors like these contribute about 14% of the total burden of disease in the UK.

It gets worse. The health damage of bad environments falls unequally: on the most deprived, and on black, Asian and minority ethnic communities.

Take healthy life expectancy – the number of years we live in good health. The difference in healthy life expectancy between the most and least deprived areas of England, which are also often the most polluted environments and have disproportionately bad air quality, is currently around 19 years. I will say that again: whether you get nearly two extra decades of good health

depends on where you live and your level of material comfort.

There is also racial inequality in terms of access to nature and the health benefits that brings: one study found that city communities with 40% or more black, Asian or ethnic minority residents have access to 11 times fewer green spaces locally than those comprising mainly white residents.

One last depressing fact: the climate emergency will make all this worse. Heat related deaths may increase from 2,000 to 7,000 per year by the mid-2050s. There will also be an increase in air pollution, fires (with associated respiratory damage), flooding and coastal erosion – all with consequences for mental and physical health.

So much for the gloom. The good news is that we know how to solve these problems.

We know that drinking clean water, breathing clean air and living on uncontaminated land are important ingredients for long and healthy lives.

We know that green environments enhance health and wellbeing. A study of over 19,000 people in England found that those who spent two hours or more a week in open green spaces were significantly more likely to report good health or high wellbeing.

We know that a blue environment can be as good or even better for you than a green one: living near or visiting the coast, rivers and lakes increases people's reported levels of mental health and wellbeing. Proximity to the coast in particular has been found to be associated with less obesity and higher overall health.

We know that spending time in nature is not only good for your general health but that it also improves how you feel about life. Natural England run a regular survey monitoring time spent in the natural environment. Their latest (2020) report shows that people who visit nature at least once a week are nearly twice as likely to say that their lives are worthwhile than those with low nature connectedness.

There is also evidence that just as diversity is good for organisations, it's good for nature and health too. A diverse natural environment appears to be better for our health than a monoculture: apart from the added interest and beauty in places where many species are present rather than few, exposure to biologically diverse ecosystems may influence the development of a healthy immune system. Studies have found, for example, that children living on farms – where they are exposed to a wider range of flora and fauna than most others – are less likely to develop asthma.

And we know that the nature on which our health ultimately relies is an integrated system: in order for it to work optimally, every bit of it has to work. Which is why the EA's new Five Year Action plan commits us to improve all the key elements of that environment – air, land and water – and commits us to tackle the biggest of all threats to that environment, the climate emergency.

Not only do we know what the solutions are, we are starting to deliver them.

The government is tackling the pollution that harms humans. Its Clean Air Strategy, for example, sets out comprehensive plans for dealing with all sources of air pollution, and aims to make our air healthier to breathe, protect nature and boost the economy.

The government has also set out an audacious goal for nature as a whole – that we will be the first generation to leave the environment in a better state than we found it. And it has produced an ambitious 25 Year Plan to deliver that goal, which includes commitments on clean air, clean water, thriving plants and wildlife, a reduced risk from environmental hazards such as flooding and drought, minimising waste, managing exposure to chemicals, and mitigating and adapting to climate change. The new Environment Bill now before Parliament will make provision to enshrine in law many of the targets we will need to hit.

The Environment Agency has played a big part in the design of these arrangements and we will play an even bigger part in delivering them.

So, for example, the EA's regulation of industry, water companies and farming helps prevent much of the pollution that would otherwise hurt human health. Our regulation of greenhouse gas emitting industries ensures they reduce their emissions and thus the extent of climate change. Through our role as a statutory planning consultee we are helping the country adapt to the effects of climate change by creating more resilient towns and cities. And by building new flood defences we are protecting more communities against the higher tides and more extreme rainfall that climate change is bringing.

As we do all these things, we are trying to keep health and wellbeing in mind. The EA's Warrington flood defence scheme, for example, which protects over 2,000 homes and businesses, was also designed to create reed bed habitats, plant trees, open up riverside paths, and improve the views across the river and town. The benefits from the air quality improvement, recreation and physical activity that delivers are real, and can be calculated: they add up to over £70 million over the lifetime of the scheme. But the benefit in terms of quality of life is priceless.

The EA also regulates and supports the country's most popular pastime: angling. We maintain and restock fisheries, improve river habitats, stop poaching, and prevent the spread of damaging non-native species. We do all this because it's the right thing to do and because anglers pay us to do it through the rod licence fee. But we also do it because angling has a multitude of health and social benefits, particularly for those with limited opportunities for other forms of physical exercise or who are less healthy.

The scientists, academics, researchers and medics are doing their bit too. You the audience are, both in the day to day work many of you do to create better health and environmental outcomes, and in simply showing up for this speech to register your support. It is hugely welcome that the medical and research community is putting more emphasis than ever on prevention of illness to avoid the need for cure; doing more research that will help us

better target our interventions; and recognising the healthcare benefits of investing in nature as well as in medical care itself.

We are seeing action from medical practitioners too: over the last few years there has been a significant rise in social prescribing, with GPs prescribing walking, gardening or other activities rather than drugs to alleviate mental and physical ailments.

Let me make one final point: there is a direct link between creating a healthy environment and tackling our biggest immediate challenge, Coronavirus.

Lockdown temporarily stopped or reduced many things that threaten our health, like traffic noise and vehicle emissions. It reminded us all how important nature is as a source of mental and physical healing. The active travel (walking, cycling) that many more people are now doing doesn't just reduce the infection risk on public transport, it provides health benefits too. And the government's commitment to build back better for a green recovery offers the prospect not just of sustainable growth but of better health too.

And there is a deeper, longer term link: that as we emerge from the pandemic with a resolve to ensure better health for everyone for future, one of the best of all ways to achieve that is to protect our nature and ensure we all have equal access to it.

I've given you a fifteen minute summary of the new EA report. If you want the whole thing, it's online. And if you want the ten-second summary of the summary, here it is:

You can only have healthy humans if you have a healthy planet. When we damage nature we damage people too. If we look after nature, it will look after us. Doing so costs money. But it's the best possible investment we could make, because the benefit/cost ratio is fantastic – not just in costs saved for the NHS, but in lives saved for our communities, and a future saved for our planet.