Natural Environment Research Council

Your life, improved by environmental science

Environmental science is woven into our daily lives. Through decades of investment in pioneering research, new technology, training and world-class infrastructure, NERC's work helps protect your health, secure the services you rely on, and improve your daily life

Electricity: secure, home-grown power

Our environmental data is essential for building the UK's offshore wind farms, which now power millions of homes with clean electricity

Air: healthier air for everyone

Our research has driven national action on air pollution, from policies that cut UK Sulphur Dioxide emissions by 98% to the creation of London's ULEZ

Food: a safer and more sustainable food chain

By protecting vital pollinators like bees, while also helping major brands like Tesco and Heinz cut carbon emissions from their farms

Weather: planning your day

Our partnership with the Met Office delivers more accurate forecasts that help people, businesses, and public services plan ahead, delivering billions in benefit to the UK

Engagement: inspiring a global audience to act

Our scientists feature in BBC shows like Blue Planet II, which reached over one billion viewers worldwide and helped to spark a global movement against plastic pollution

Connectivity: protecting our internet and power supply

Our science helps protect the vital networks that deliver these services, from undersea internet cables to the power grids and satellites vulnerable to space weather.

Water: cleaner water, from our taps to our coasts

From improving the quality of your drinking water to developing new technology that keeps our bathing waters safe, our science protects this vital resource for everyone

More info

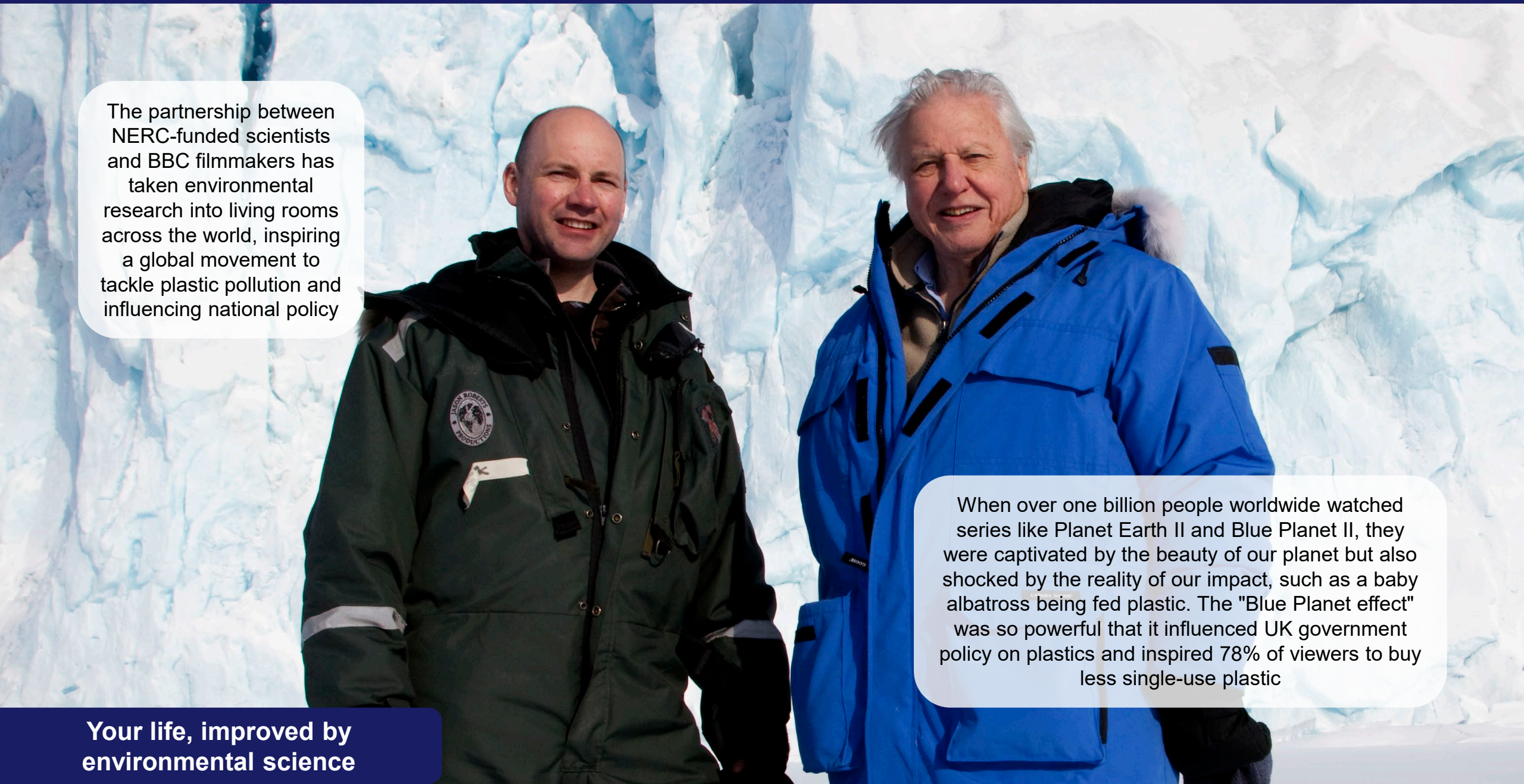
Impact: Cleaning up our air for a healthier UK

From cleaner cities to healthier towns and villages, NERC science has delivered huge benefits for UK public health and saved our economy billions by providing the evidence to tackle air pollution

While UK air quality has improved dramatically, with some key pollutants cut by up to 98%, it remains our biggest environmental health threat. For four decades, NERC science has driven these improvements and tackled the remaining challenges, delivering benefits for our health and economy worth an estimated £1.2 billion every year

Your life, improved by environmental science

Impact: Inspiring a billion people to protect our planet



The partnership between NERC-funded scientists and BBC filmmakers has taken environmental research into living rooms across the world, inspiring a global movement to tackle plastic pollution and influencing national policy

When over one billion people worldwide watched series like Planet Earth II and Blue Planet II, they were captivated by the beauty of our planet but also shocked by the reality of our impact, such as a baby albatross being fed plastic. The "Blue Planet effect" was so powerful that it influenced UK government policy on plastics and inspired 78% of viewers to buy less single-use plastic

Your life, improved by environmental science

Impact: Clean electricity for our homes and a greener future

Every time we switch on a light, we are part of the UK's clean energy revolution. NERC science has been essential in helping build our world-leading offshore wind industry, ensuring this vital source of clean electricity for our homes is developed safely and in balance with nature

Clean, reliable electricity is fundamental to our daily lives. As the UK moves away from fossil fuels, offshore wind has become a cornerstone of our energy supply, generating enough clean electricity to power the equivalent of over 18 million UK homes. This green energy revolution is built on a foundation of NERC science, which has already delivered £3.3 billion in economic value to the UK and supports over 32,000 skilled jobs

Your life, improved by environmental science

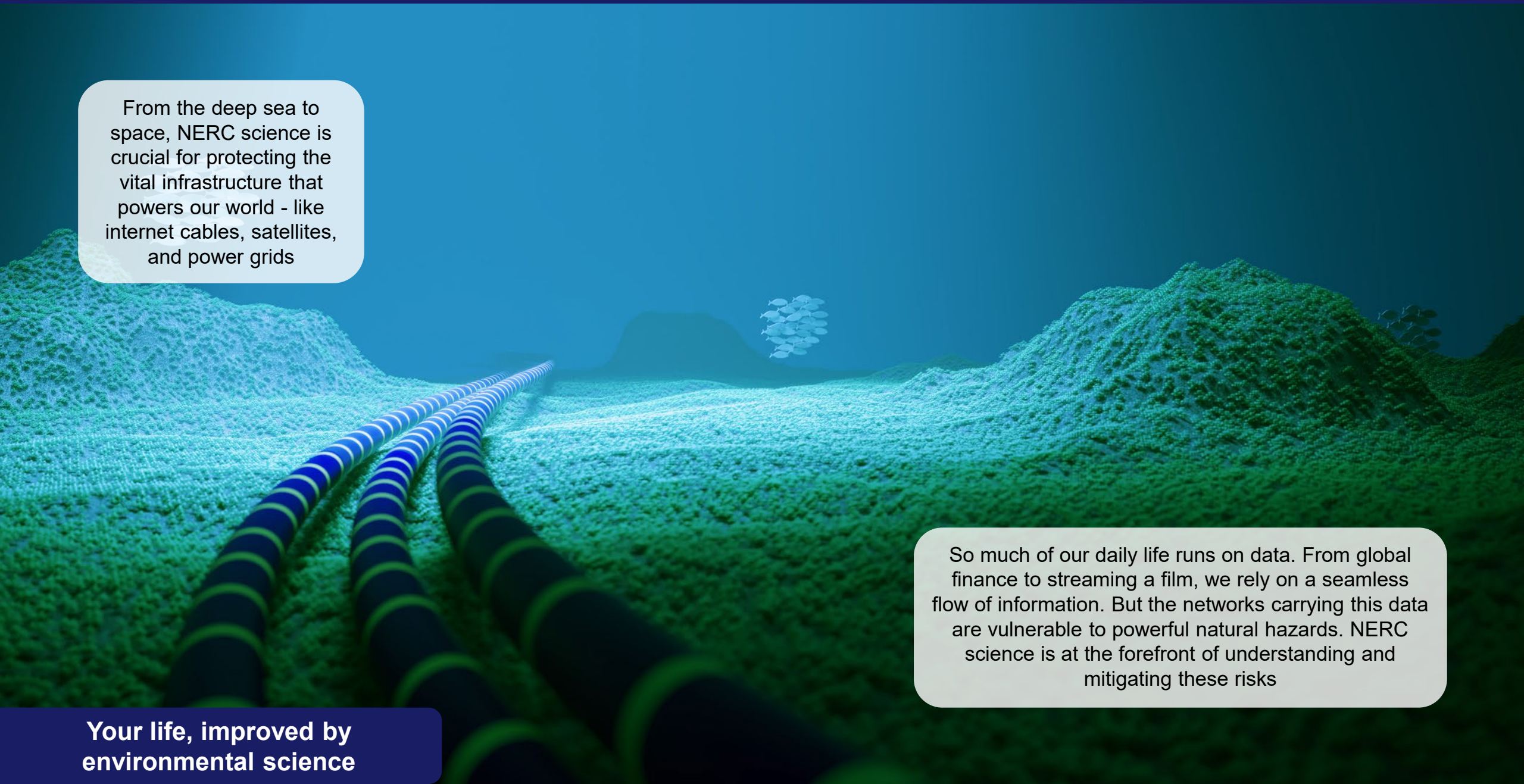
Impact: The science behind cleaner, safer water

From the quality of water in your tap to the safety of the rivers and seas we enjoy, NERC science is crucial for improving our water environment, developing new technology, and better managing the landscapes our water flows through

Clean and plentiful water is fundamental to our lives and livelihoods, supporting our health, our food, and our well-being. NERC science is crucial for protecting this precious resource - from source to sea - and the major economic sectors that depend on it, including our £10 billion a year coastal tourism industry

Your life, improved by environmental science

Impact: Securing our connected, digital world

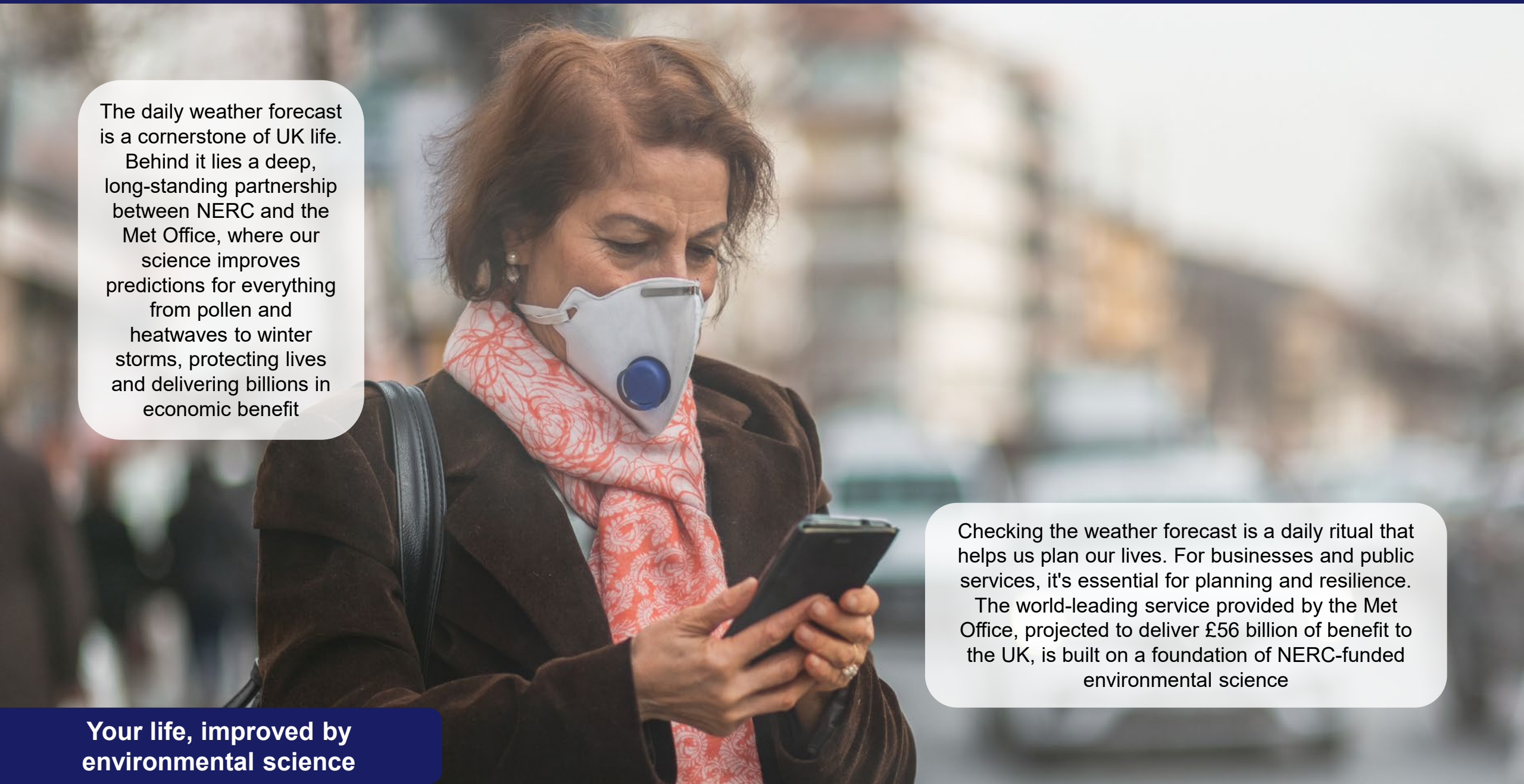


From the deep sea to space, NERC science is crucial for protecting the vital infrastructure that powers our world - like internet cables, satellites, and power grids

So much of our daily life runs on data. From global finance to streaming a film, we rely on a seamless flow of information. But the networks carrying this data are vulnerable to powerful natural hazards. NERC science is at the forefront of understanding and mitigating these risks

Your life, improved by environmental science

Impact: The science behind your daily weather forecast



The daily weather forecast is a cornerstone of UK life. Behind it lies a deep, long-standing partnership between NERC and the Met Office, where our science improves predictions for everything from pollen and heatwaves to winter storms, protecting lives and delivering billions in economic benefit

Checking the weather forecast is a daily ritual that helps us plan our lives. For businesses and public services, it's essential for planning and resilience. The world-leading service provided by the Met Office, projected to deliver £56 billion of benefit to the UK, is built on a foundation of NERC-funded environmental science

Your life, improved by environmental science

Impact: Creating a safer and more sustainable food chain

From the fields where our food is grown to the supermarkets where we buy it, NERC science is protecting the vital pollinators our crops rely on and helping major food brands like Tesco and Heinz reduce their environmental footprint

The food on our plates connects us directly to the environment. Our food system relies on a healthy ecosystem, from the insects that pollinate our crops to a stable climate, but it is also a major source of greenhouse gas emissions. NERC-funded science is crucial for tackling both sides of this challenge, for example by safeguarding the pollination services to UK farms that are worth over £500 million a year

Your life, improved by environmental science

Your life: Case Studies

Impact: Cleaning up our air for a healthier UK

What is it? Poor air quality is the UK's biggest environmental threat to our health, contributing to tens of thousands of premature deaths and predicted to cost the NHS £18.6 billion by 2035 without action.

What was NERC's role? For four decades, NERC has funded the science that has driven national action on this challenge. Our research provided the evidence for policies that cut key pollutants, and supported the development of new technologies like low-cost sensors to pinpoint pollution hotspots.

What difference has it made? This work has helped cut UK sulphur dioxide emissions by 98% and contributed to schemes like London's ULEZ, which has cut nitrogen dioxide by 44%. The overall benefits of this research are worth an estimated £1.2 billion every year.

Link: NERC clean air case study, UKRI Clean Air Programme

Impact: Inspiring a billion people to protect our planet

What is it? The powerful partnership between UK environmental scientists and BBC filmmakers on world-renowned nature documentaries like Blue Planet II and Planet Earth III.

What was NERC's role? NERC-funded scientists were essential partners in these productions. They acted as scientific consultants, advised on storylines, guided film crews, and featured on screen to explain the science.

What difference has it made? These series have been watched by over one billion people worldwide. The "Blue Planet effect" directly influenced UK government policy on plastics and inspired 78% of viewers to reduce their own single-use plastic.

Link: NERC turning trailblazing science into agenda-setting TV case study

Impact: Clean electricity for our homes and a greener future

What is it? The growth of the UK's world-leading offshore wind industry, which is a cornerstone of our energy supply and journey to Net Zero.

What was NERC's role? For decades, NERC has gathered the environmental data essential to build windfarms safely and sustainably. This includes mapping the seabed to find safe foundations and researching marine life to ensure windfarms are located in a way that protects vital habitats.

What difference has it made? The UK's offshore wind industry now powers the equivalent of over 18 million homes. The science supporting it has delivered £3.3 billion in economic value and helps support over 32,000 skilled jobs, particularly in our coastal communities.

Link: NERC environmental science is worth £3.3 billion to UK offshore wind case study

Impact: The science behind cleaner, safer water

What is it? Protecting the UK's water is fundamental to our health and economy. This includes ensuring the quality of our drinking water and the safety of the rivers and seas that support a £10 billion-a-year coastal tourism industry.

What was NERC's role? Our science has improved how we manage the landscapes that our drinking water flows through and has driven the innovation of new technology for rapid water-safety testing at the coast.

What difference has it made? This research has helped cut impurities in drinking water by up to 50% in key areas and has created 15-minute safety tests that give the public greater confidence in the safety of our bathing waters.

Link: NERC benefits across the UK case study, UKRI Floods and Droughts Research Infrastructure, Molendotech

Your life: Case Studies

Impact: Protecting the vital networks we rely on

What is it? Securing the critical infrastructure that underpins our connected, digital world, from undersea data cables to satellites in space.

What was NERC's role? Our research discovered the cause of mysterious breaks in the undersea internet cables that carry 99% of global data. We also provide the crucial data and models from the British Antarctic Survey (BAS) and British Geological Survey (BGS) for the UK's national space weather forecast.

What difference has it made? This science allows cable companies to plan safer routes for internet infrastructure. It also allows the power grid, aviation, and satellite industries to take pre-emptive action to protect their services from the threat of solar storms.

Link: Protecting satellites with daily space weather forecasts and Protecting subsea global telecommunications networks case studies

Impact: The science behind your daily weather forecast

What is it? The daily weather forecast, a cornerstone of UK life that is essential for public planning, business resilience, and personal safety.

What's NERC's role? NERC has a deep, long-standing partnership with the Met Office, investing in the research, skills, and infrastructure needed to make their world-leading computer models ever more accurate.

What difference has it made? This partnership delivers billions in economic benefit to the UK. Its improved accuracy has tangible health benefits, from saving lives during heatwaves to helping the UK's 15 million hay fever sufferers manage their day.

Link: NERC and the Met Office in partnership case study

Impact: Creating a safer and more sustainable food chain

What is it? Tackling the twin challenges of our food system: reducing its environmental impact while protecting the healthy ecosystems it relies on.

What was NERC's role? Our research provided the crucial evidence that led to UK and EU bans on harmful neonicotinoid pesticides, protecting vital pollinators. We also co-developed the Cool Farm Tool, an online calculator that helps farmers reduce their greenhouse gas emissions.

What difference has it made? The pesticide bans safeguarded pollination services worth over £500 million a year to UK farms. The Cool Farm Tool is now used by tens of thousands of farmers supplying major brands like Tesco and Heinz, and has helped achieve significant emissions cuts.

Link: NERC biodiversity case study, Cool Farm Tool REF2021 case study