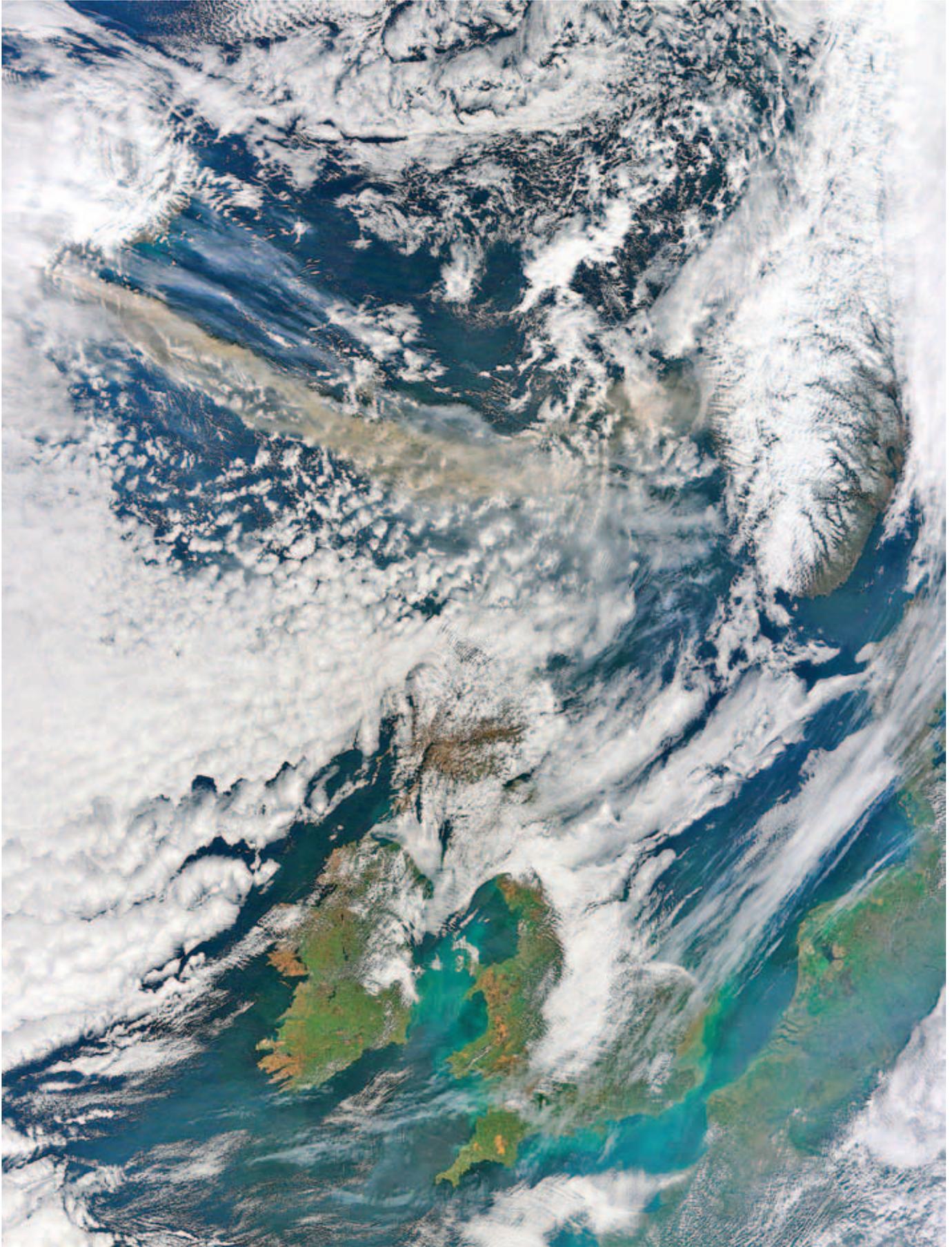


2009-10
Annual Report
& Accounts







Natural Environment Research Council Annual Report and Accounts 2009-10

Presented to Parliament pursuant to Section 2 (2)
of the Science and Technology Act 1965.
Ordered by the House of Commons
to be printed on 30 November 2010

HC 480 London: The Stationery Office £19.75

© Natural Environment Research Council (2010)

The text of this document (this excludes, where present, the Royal Arms and all departmental and agency logos) may be reproduced free of charge in any format or medium providing that it is reproduced accurately and not in a misleading context.

The material must be acknowledged as Natural Environment Research Council copyright and the document title specified. Where third party material has been identified, permission from the respective copyright holder must be sought.

ISBN: 978 0 10296519 3

Printed in the UK for The Stationery Office Limited on behalf of the
Controller of Her Majesty's Stationery Office

ID P002363414 11/10

Printed on paper containing 75% recycled fibre content minimum.

The Natural Environment Research Council (NERC) is a publicly funded organisation that delivers independent, world-class environmental research. One of the seven research councils, we are the UK's main agency for funding and strategically directing research, training and knowledge exchange in the environmental sciences.

Our goal is to address the most pressing environmental issues facing society. The scientists we support work in collaboration with industry and policy-makers to ensure that our research directly benefits the people who pay for it.

Contents

The year in review	06
Climate system	08
Biodiversity	10
Sustainable use of natural resources	12
Natural hazards	14
Environment, pollution and human health	16
Earth system science	18
Technologies	20
Knowledge exchange	22
People	26
National capability	28
Partnerships	30
Delivering the strategy	32
Management commentary	44
Annual accounts	48



Next Generation Science for Planet Earth

NERC strategic goals

To deliver world-leading environmental research at the frontiers of knowledge:

- Enabling society to respond urgently to global climate change and the increasing pressures on natural resources.
- Contributing to UK leadership in predicting the regional and local impacts of environmental change over timescales from days to decades.
- Creating and supporting vibrant, integrated research communities.

With our researchers and stakeholders, we develop the priorities that provide a focus for the marine, polar, atmospheric, geological, terrestrial and freshwater science communities.

This research is often multidisciplinary and in collaboration with national and international partners.

NERC runs a fleet of research ships and scientific aircraft. We have bases in some of the world's most hostile environments and we invest in satellite technology to monitor environmental change on a global scale.

NERC is committed to developing UK and international capability across the environmental sciences. We fund centres and universities to carry out research and to train and support a world-class community of environmental scientists.

NERC has six major environmental research centres:

British Antarctic Survey	BAS
British Geological Survey	BGS
Centre for Ecology & Hydrology	CEH
National Oceanography Centre	NOC
National Centre for Atmospheric Science	NCAS
National Centre for Earth Observation	NCEO

Where their names appear in this report they have been abbreviated.



The year in review

Environmental science has been in the headlines for all sorts of reasons over the past year. Whether we are responding to natural disasters or providing the knowledge to support policy, for NERC the challenge is to support world-leading environmental research in the UK and to communicate, openly and transparently, the many benefits this research provides.

We cannot do without the research funded under NERC's wide remit if we want to thrive in the face of our global environmental challenges – be they threats to biodiversity or pressures on the climate or on our natural resources like food, water and energy. Environmental science is fundamental to securing a productive economy, a healthy society and a sustainable world for all of us. Within Research Councils UK, we deliver world-leading research that offers 'Excellence with Impact'.

But NERC science is not just about finding solutions to problems – it's about looking forward and grasping opportunities. We have an unprecedented chance to position the UK at the forefront of the emerging green economy, for example, and the research NERC funds is already doing this. NERC scientists are collaborating with industry and government to investigate cost-effective and sustainable methods of carbon capture and storage – an area which is expected to grow dramatically in the coming decades.

NERC-funded researchers continue to work alongside key collaborators to refine the models that help us understand, predict and defend against extreme coastal flooding – a risk that already costs the nation some £1 billion a year on top of the impact on people's lives. At the opposite extreme of the water cycle, other research is improving drought monitoring and forecasting across the UK.

Environmental research also helps safeguard people's health. NERC-funded scientists contributed to the recent parliamentary committee finding that polluted air kills 50,000 people a year in the UK. Other research described in this report shows that cooking oil can have as much impact on air quality as car

exhausts – information that will help policy-makers develop more effective urban pollution controls.

Living within the Earth's finite natural resources is a major driver of the research NERC supports. Scientists, industry and policy-makers are working closely together to manage and protect those resources in programmes that include Living with Environmental Change, in which NERC works in partnership with 19 other organisations including Defra, the Scottish and Welsh Governments, the Met Office and our sister research councils.

NERC-funded research provides the evidence on which sound policy must be based. Our work highlighting the latest research on climate science was crucial to informing efforts at Copenhagen to reach agreement on international action to combat climate change. Closer to home, the marine scientists we support have made significant contributions to new legislation, such as the Marine and Coastal Access Act and Scottish Marine Act, which mark a step-change in how we manage Britain's coastal resources and territorial waters. This work has supported the designation of the world's first-ever marine protected area on the high seas, around the South Orkney Islands, and is underpinning the reform of the EU Common Fisheries Policy.

In response, NERC has created the National Oceanographic Centre by merging the expertise of its two world-leading oceanographic centres, to work in partnership with other institutes and universities to deliver more effectively the marine science that will ensure we continue to provide this kind of support for effective policy.

Central to all this is NERC's continuing investment in research infrastructure. Earlier in



2010, we committed £75 million to a state-of-the-art research ship to replace the ageing RRS *Discovery*. We also contributed to the successful launch of CryoSat 2, the new European Space Agency satellite which will map the condition of polar ice in unprecedented detail. This will improve our understanding of rapidly-changing areas of the ice caps, such as Antarctica's Pine Island Glacier, which is thinning so quickly that researchers now believe its main trunk could be afloat within a century.

Such investments in UK national capability are vital to maintaining our international standing. They place the UK at the heart of responses to international disasters, and ensure our ability to work alongside domestic and international partners to tackle global issues.

Over the last year, NERC-funded scientists have helped authorities respond to devastating natural disasters all over the world. In the immediate aftermath of the Haitian earthquake, our researchers helped the World Bank assess the damage around Port-au-Prince by analysing high-resolution satellite images and worked with charities and non-government organisations to identify safe areas where relief operations could be concentrated.

And when Iceland's Eyjafjallajökull volcano brought Europe's airlines to a standstill, NERC's Dornier 228 – soon followed by the joint NERC-Met Office BAe 146 – provided a rapid response to the UK civil emergency. Our continued investment in such important assets meant our technicians, pilots and researchers were quickly airborne and gathering information to inform government and aviation-industry decisions about reopening UK airspace.

Sustaining all these contributions is NERC's commitment to investing in the next generation

Highlights of the year

NERC and its scientific community have:

- Contributed much evidence that informed discussions at Copenhagen
- Provided the scientific foundations for some major marine legislation
- Improved the UK's capacity to forecast economically devastating floods
- Used our research aircraft to give crucial scientific support in a civil emergency
- Responded rapidly to devastating natural disasters overseas
- Created a new National Oceanography Centre to better deliver integrated marine science and international marine policy
- Invested in a new research ship to ensure our future in delivering world-class science.

NERC-funded scientists have shown that:

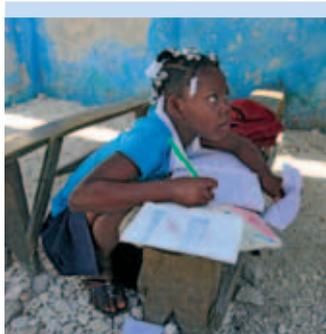
- British winters end 11 days sooner than they did just 40 years ago, with potentially devastating effects on biodiversity
- Sacrificing rainforest to create oil-palm plantations can lead to harmful ozone pollution
- Increases in atmospheric carbon dioxide continue to outstrip the ability of the world's natural carbon sinks to absorb it
- Human activities have caused more than half the increase in sea levels since 1850
- Emissions from cooking oil can be as bad for air quality as car engines
- Ticks' saliva could form the basis for life-saving new anti-clotting drugs.

of environmental scientists, and to sharing our skills and knowledge with policy-makers and industry. Our thriving internship and fellowship programmes give both researchers and hosts the opportunity to learn from each other and share expertise, as well as giving both a valuable insight into the other's world. Such understanding is vital if we are to collaborate effectively to address the challenges we face.

All these achievements, and the others

described in this report, show how this year more than ever NERC has delivered world-leading research. This will safeguard our well-being, give the UK a flying start in the green economy and put our society on a sustainable footing.

Alan Thorpe, Chief Executive
Ed Wallis, Chairman
11 October 2010



Climate system

Tackling the challenges of climate change by improving predictions and quantifying uncertainty

Not-so-fluffy white clouds

Aircraft condensation trails can develop into cirrus clouds that last for hours so it's important to understand how they form and what effect they have on the climate. The NCEO demonstrated that even a single flight can have a measurable impact. A combination of modelling, conventional observations and satellite data looked at cirrus generated by one flight and showed it reflected sunlight back to space by day and thus had some cooling effect. However, this cooling was outweighed by the measurable warming produced by the cloud through its enhanced greenhouse effect.

A case study of the radiative forcing of persistent contrails evolving into contrail-induced cirrus, Journal of Geophysical Research, 2009.

Antarctic and Greenland ice-sheet thinning spreads

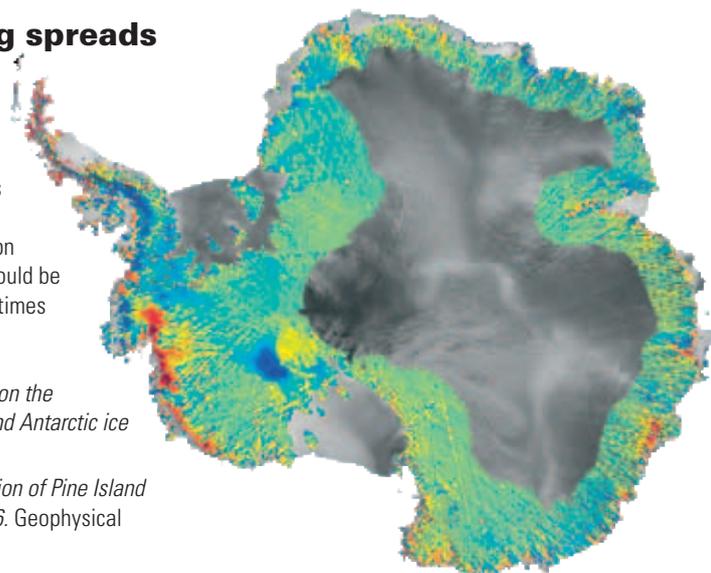
In 2009, scientists obtained the most comprehensive picture yet of the rapidly thinning glaciers along the coastline of both the Antarctic and Greenland ice sheets. The study, led by BAS scientists, showed that ice-sheet thinning reached the far north of Greenland, intensified in Antarctica and spread and penetrated far into the interior of both ice sheets as the glaciers accelerated. The findings are an important step forward in making more accurate predictions of how much sea levels will rise in the future.

A specific example of ice-sheet loss is West Antarctica's Pine Island Glacier, where thinning has both accelerated and spread inland to take in tributaries flowing into the glacier's central trunk. Using satellite radar, researchers from

University College London and the University of Edinburgh found that the average rate of volume loss quadrupled between 1995 and 2006. If this acceleration continues, the main trunk could be afloat within a century, six times sooner than anticipated.

Extensive dynamic thinning on the margins of the Greenland and Antarctic ice sheets, Nature, 2009.

Spatial and temporal evolution of Pine Island Glacier thinning, 1995–2006. Geophysical Research Letters, 2009



Polluted skies boost plants' carbon intake

Particle pollution in the air is softening the impact of human emissions on the climate by making plants absorb more carbon dioxide. Between 1960 and 1999, scientists at institutions including CEH, the University of Exeter and the Met Office Hadley Centre calculated that the effect boosted the total amount of CO₂ absorbed on land by 10 per cent. Hazy, polluted conditions diffuse sunlight, letting plants photosynthesise more efficiently. The findings present a dilemma for policy-makers. Particle pollution badly damages human health, and many countries are committed to cutting it. But if they do, efforts to fight climate change will become even more difficult – clearer skies will make plants absorb less CO₂, so they will do less to counterbalance the effect of human emissions.

Impact of changes in diffuse radiation on the global land carbon sink, Nature, 2009.

Clean coal and sparkling water

The multidisciplinary UK Carbon Capture and Storage Consortium (UKCCSC) has proposed a safe and economical method for capturing and storing man-made carbon dioxide (CO₂), by injecting it deep into the ground where it dissolves in groundwater. By studying liquid CO₂ occurring in natural gas fields the team was able to assess the potential effects of this storage over thousands of years. However the researchers emphasise that the long-term consequences of retaining CO₂ below ground in this way cannot yet be fully understood from observations of existing CO₂ disposal sites and that the safety of the method depends on exactly how and where the gas will be stored over the lifetime of the site.

Solubility trapping in formation water as dominant CO₂ sink in natural gas fields, Nature, 2009.

The small crystal controversy

The degree to which ice clouds reflect sunlight back to space has important implications for global warming. For many years researchers believed that cirrus clouds contained lots of highly reflective ice crystals. Scientists at the University of Reading used Doppler lidar – which takes measurements using pulses of laser light – to look inside the clouds and found that most do not contain large numbers of ice crystals at all. It appears that previous measurements taken by aircraft are unreliable because crystals were shattering on the instrument intake causing more ice fragments to be counted. Hence the cooling effect of these ice clouds has probably been overestimated in the past.

Testing the influence of small crystals on ice size spectra using Doppler lidar observations, Geophysical Research Letters, 2009.

COPENHAGEN

Alongside the main event at the Copenhagen summit, NERC scientists were informing and influencing policy-makers, through seminars, presentation of results, and behind-the-scenes analysis.

- CEH presented key evidence that, within current estimates of feasible rates of reducing emissions, greenhouse gas emissions must peak before 2025 to keep global warming below 2°C.
- BAS carried out the first comprehensive review of Antarctica's climate and its relationship to the global climate system, which addressed policy-makers' urgent questions about the consequences of Antarctic melting.
- NERC scientists in the Global Carbon Project (GCP) presented the strongest evidence yet that increases in atmospheric CO₂ continue to outstrip the ability of the world's natural sinks to absorb it.
- GCP reported that developing countries now emit more greenhouse gases than developed countries, with 25 per cent of this recent growth due to increased trade with developed countries.
- The International Nitrogen Initiative and CEH co-hosted a seminar for policy-makers, emphasising that it is crucial they understand the importance of nitrogen to climate change if they are to develop appropriate mitigation strategies.

Biodiversity

Understanding how we benefit from the variety of life on Earth

Biodiversity in a changing climate

British plants and animals may be affected by shifts in the seasons, which are moving with climate change according to a team led by CEH researchers. The majority of spring and summer biological events now start earlier than in the mid-1970s, according to an analysis of 726 land- and water-dwelling species. This could mean periods of peak food availability become mismatched with periods of peak demand during breeding, with knock-on effects for the survival of the next generation and ultimately loss of biodiversity.

Trophic level asynchrony in rates of phenological change for marine, freshwater and terrestrial environments, Global Change Biology, 2010.

HIGHLIGHTS

- Butterflies and other organisms have more specialised habitat needs at the edges of the whole area they inhabit, where the climate doesn't suit them perfectly, University of York and CEH scientists have shown. As the climate warms, the area in which the weather is ideal for each species is changing. The kinds of habitat that suit each best are changing too, and conservation practices must adapt to reflect this.
- Marine Biological Association scientists are monitoring how seaweeds and invertebrates are coping with climate change around south-west England. The project's data stretches back to the 1950s and shows how different species are responding to warming conditions. The results are contributing to national and Europe-wide projects to assess the impacts of climate change.
- British woodlands are less varied and distinctive than in the early 20th-century. Scientists found greater similarity between the range of species in individual Dorset woodlands than there was in the 1930s. Fertiliser use and the decline in practices like coppicing are partly to blame.
- CEH researchers produced one of a set of 18 indicators that are helping policy-makers and conservationists to measure biodiversity. Their indicator tracks the presence of invasive species in Britain between 1960 and 2007, and will be used to measure the UK's progress towards its international biodiversity treaty obligations.

Conservation better than restoration

We can help damaged habitats recover, but we can't bring them back to their pristine state. Environmental degradation is a worldwide problem, and a recent analysis of 89 projects aimed at reversing the trend shows they can help restore biodiversity and the ecosystem services like clean water and productive soils that depend on it, improving them by 44 per cent and 25 per cent respectively. But a CEH study showed that both remained lower than in untouched habitats, showing the importance of preserving those we still have.

Enhancement of biodiversity and ecosystem services by ecological restoration: a meta-analysis, Science, 2009.

Turning the tide of invasive mink



Predatory American mink have been devastating fragile UK ecosystems ever since they were introduced by fur farmers during the 20th century. Once they're established in an area, eradicating them is difficult. But University of Aberdeen scientists have shown that alien invaders can be beaten with the right approach.

Working with local governments, conservationists, industry and local communities they have forced the mink to retreat from some 10,000km² of land across the Cairngorms – one of the biggest successes ever seen in eradicating an invasive species.

Do rabbits eat voles? Apparent competition, habitat heterogeneity and large-scale coexistence under mink predation, Ecology Letters, 2009.

Dinosaurs had ginger feathers

A British-Chinese team of palaeontologists has discovered what colour dinosaur feathers were. By looking at proteins preserved in fossilised dinosaur remains, they found that a dinosaur called *Sinosauropteryx* had feathers displaying ginger and white stripes on its tail. Other dinosaurs and fossil birds from China contain morphologically different colour-bearing fossilised proteins that indicate black, grey or brown coloured feathers. The scientists think because these feathers are on the dinosaurs' tails, they probably evolved first for display and only later became useful for insulation and flight.

Fossilized melanosomes and the colour of Cretaceous dinosaurs and birds, Nature, 2010.



Chuang Zhao and Lida Xing/Institute of Vertebrate Palaeontology and Palaeoanthropology, Beijing

Rotten lampreys show bias in fossil record

Studies of rotting fish including lampreys by researchers at the University of Leicester suggest the fossil record as we know it may be biased, with the earliest known examples of vertebrates probably more complex than scientists thought. Fossils provide the only direct evidence of what ancient creatures were like. But when vertebrates first appeared more than 500 million years ago, none had bones or teeth – the body-parts that usually survive as fossils. Studying how the relatives of early vertebrates rot shows that the most characteristic anatomical features decayed first, making it harder to correctly place the fossils on the tree of life.

Non-random decay of chordate characters causes bias in fossil interpretation, Nature, 2010.

Sustainable use of natural resources

Managing our finite resources so we can live within the Earth's limits

Changes in tropical land use and air pollution

The rush into biofuels could be doing more harm than good to air quality. Scientists from institutions including Lancaster University and NCAS have found that converting rainforest to oil-palm plantations can increase air pollution. They showed it significantly raises emissions of volatile organic compounds and nitrogen oxides. These react with sunlight to form ozone in the lower atmosphere – one of the most damaging air pollutants, with effects on crops and humans. Using ground-level and airborne measurements and atmospheric chemistry models, the researchers compared a Malaysian plantation with nearby rainforest. They found that ozone pollution in the region is still limited, but their calculations show that as the landscape becomes more industrialised, policy-makers need to take steps to control nitrogen emissions in order to maintain air quality.

Nitrogen management is essential to prevent tropical oil palm plantations from causing ground-level ozone pollution, Proceedings of the National Academy of Sciences, 2009.



Why do fish live on the edge?

A team at the newly-formed National Oceanography Centre discovered for the first time why fish are so abundant along continental shelves – they found a strong ‘internal tide’ in the Celtic Sea. This is a large wave that moves between warm surface waters and cold deep ones, creating turbulence as it breaks and stirring up nutrients from deeper water. These don’t just feed the plankton at the base of the marine food chain – the scientists found they also make bigger plankton grow, providing the perfect environment for the young of fish species like mackerel. Similar processes go on along continental shelves all over the world, and understanding them will be vital to conserving fisheries.

Internal tidal mixing as a control on continental margin ecosystems, Geophysical Research Letters, 2009.



Native plants could help African farmers

Switching to crops native to Africa could help the continent’s farmers provide a more secure food supply and cope better with the changing climate, according to scientists at the University of Dundee, CEH, the Kenya Forestry Research Institute and Tshwane University of Technology in South Africa. They identified several native legumes – plants in the same family as peas – that are more suitable for local conditions than imported crops like soybeans and peanuts. Broadening the range of crops by cultivating more plants like cowpeas or honeybush could make Africa’s food supply less vulnerable to

disease or pest epidemics. It could also cut the need for artificial fertilisers, allow more marginal land to be cultivated, increase the soil’s fertility and diversity of microbes, and let it store more carbon. The authors suggest taking native species as a starting point and using selective breeding or genetic modification to improve on the beneficial qualities they already offer.

African legumes: a vital but under-utilized resource, Journal of Experimental Botany, 2009.

Peak oil report

A UK Energy Research Centre report has tackled the controversial question of whether global oil production will peak and then decline before 2030 as a result of depletion of the resource. Despite major limitations in the available data, they concluded that sufficient information was available to assess this risk and that knowledge was improving in key areas. Commonly used methods underestimate the size of remaining resources and provide overly pessimistic forecasts of future supply. Nevertheless, a peak in conventional oil production before 2030 appears likely and there is significant risk of a peak before 2020. The report received huge media and government attention.

Global oil depletion: an assessment of the evidence for a near-term peak in global oil production, UKERC, 2009.

Controlling fishing helps reefs recover

Protecting parrotfish and other key herbivores helps coral reefs rebound from damage, whether caused by hurricanes or a changing environment. Scientists from Exeter University monitored badly damaged Caribbean reefs both inside and outside marine reserves where fishing is forbidden. Unfished reefs made good recoveries, while the others made little progress. The fish graze on seaweed, which competes with coral and endangers reef recovery. Earlier modelling suggested this, and had influenced the government of Belize to ban fishermen from catching parrotfish. But this is the first experimental confirmation of the theory, and points to practical measures to limit the damage caused by the intense pressure on corals worldwide.

Marine reserves enhance the recovery of corals on Caribbean reefs, PLoS ONE, 2010.



Underground gas storage

As the UK stores only around 14 days’ supply of gas, developing greater storage volumes through underground facilities is a national priority. Man-made salt caverns and depleted oil and gas fields generally offer the best potential. BGS is researching the suitability of potential sites, using borehole and seismic data to create 3-D models to characterise the subsurface geology of potential sites. BGS scientists have presented the results of these studies, explaining the technologies involved and outlining the national need, to local authorities and at public inquiry. This work is already generating international attention.

Natural hazards

Reducing casualties and economic losses caused by natural disasters

Keeping back the sea

Coastal flooding costs the UK approximately £1 billion each year and any increase in flood frequency or severity would have serious economic and social consequences. So statistical information on extreme sea levels must be up to date and easily accessible to decision-makers in order to inform coastal defence policy. Work at NOC has provided new insight into the joint occurrence of storm surges and high tides. Scientists used high-resolution numerical models to apply these insights around the entire UK coastline. The results are directly applicable to flood and coastal defence policy and will be presented in a user-friendly interface.

Volcanic overflows

Volcanic eruptions can produce fast-moving flows of lava blocks and ash, which are typically confined to valleys. But when they breach the valley confines they can cover large and often populated areas, with devastating results. NERC-funded scientists at Keele University have found out why this can happen. It turns out that protective structures like dams, which are built to protect land and people from volcanic landslides called lahars, might actually be adding to the risk that these block-and-ash flows could spill over valley margins. The researchers also showed how minute details of surface topography can influence the route these dangerous flows follow.

Field observations and surface characteristics of pristine block-and-ash flow deposits from the 2006 eruption of Merapi Volcano, Java, Indonesia, Journal of Volcanology and Geothermal Research, 2008.



Benny Stalveya/Reuters

L'Aquila earthquake

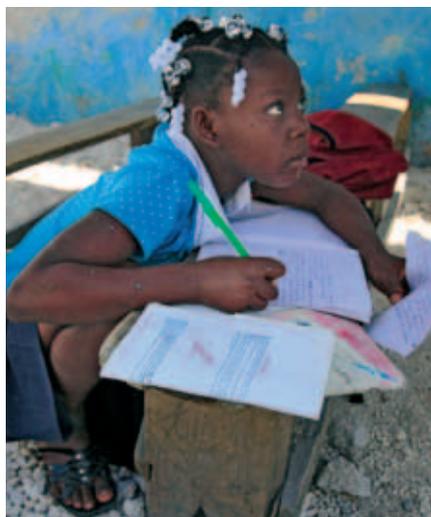
Satellite data helped researchers pinpoint the fault responsible for the earthquake that struck L'Aquila in central Italy in April 2009. The earthquake killed 308 people and left tens of thousands homeless. A UK-led team of scientists initially thought one of the well-known faults in the region was to blame. But they used radar data from satellites to work out how the ground had been warped by the magnitude 6.3 earthquake, and found that the largely overlooked Paganica fault was responsible. The findings also revealed that the earthquake has made nearby faults more dangerous and could lead to future earthquakes. This work will help the Italian authorities improve their emergency planning procedures.

The 2009 L'Aquila earthquake (central Italy): A source mechanism and implications for seismic hazard, Geophysical Research Letters, 2009.



Drought catalogue launched

Scientists from CEH have developed the first 'drought catalogue', which characterises 20th-century droughts in 24 European regions. By examining patterns of rainfall and river flow across the continent, they were able to develop a novel method of forecasting droughts in the UK, based on drought conditions elsewhere in Europe. Defra and the Environment Agency are using this work to improve drought monitoring and forecasting in England and Wales. The catalogue and other outputs are also being used in EU strategy documents on future research initiatives.



Jorge Saenz/AP/Press Association Images

Haiti

Vital data provided by BGS helped the response to the Haiti earthquake in January 2010. Scientists detected the 7.0 magnitude quake as it happened and immediately alerted agencies and rescue missions. NERC scientists assisted the World Bank by analysing high-resolution satellite and aerial images to assess the damage in and around Port-au-Prince. Working with NGOs, including the Red Cross and Unicef, scientists are continuing to help identify areas safe from aftershocks, landslips and flooding.

Environment, pollution and human health

Reducing the damaging effects of pollution and limiting the spread of disease

Probing pollution in developing cities

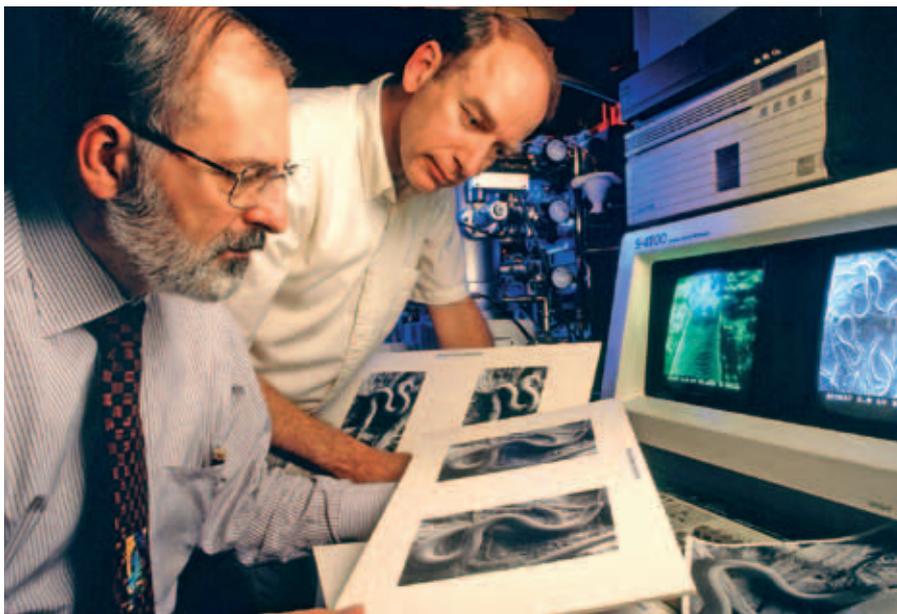
Megacities in the developing world often lack the infrastructure to quantify atmospheric pollution emissions, leaving their governments uncertain of the effects on local populations or the most effective strategies for improving air quality. Work by researchers at NCAS shows that measurements from the air could be an alternative way to quantify a whole city's emissions. They flew around Lagos in a UK atmospheric research aircraft measuring a range of chemicals released from the city in combination with weather parameters. Their results provided the first direct measurement of an African city's emissions, and highlighted petrochemical production as a major source of pollution within the Nigerian city.

Direct estimates of emissions from the megacity of Lagos, Atmospheric Chemistry and Physics, 2009.

Worms host disease-causing bacteria

Bacteria that cause disease can survive in soil and water for long periods leading to increased risk of infection in humans and animals. A team including scientists from the University of the West of England have produced the first direct evidence that parasitic worms can host and transport these bacteria through the environment. This has important implications for both animal husbandry and public health. Measures taken to decontaminate agricultural land will need to take into account the control of these worms as well as the bacteria themselves.

Bacteria isolated from parasitic nematodes – a potential novel vector of pathogens? Environmental Health, 2009



Keith Meller/Science Photo Library

Titanium pollution

Materials often touted as air purifiers have been discovered to make air pollution worse, with important implications for urban air quality. Titanium dioxide (TiO_2) is used in window coatings and in other materials used in the urban environment. In certain conditions it reacts chemically to remove nitrogen dioxide from the air. But scientists at the University of Cambridge have shown that, in the presence of sunlight, surfaces coated in TiO_2 produce gases that not only partially cancel out the apparent loss of nitrogen from the atmosphere, but can even increase urban pollution.

Solar driven nitrous acid formation on building material surfaces containing titanium dioxide: a concern for air quality in urban areas? Atmospheric Environment, 2009.



Cooking emissions rival traffic

Emissions from cooking and solid-fuel burning could be causing almost as much pollution in UK cities as traffic. Until now, road traffic has been thought to be the main direct source of polluting particles, and these are known to affect human health in a number of ways. Scientists from NCAS are investigating the sources of these particles and the processes they go through in the atmosphere. This information will be crucial for policy-makers to ensure the effectiveness of controls on urban pollution.

Contributions from transport, solid fuel burning and cooking to primary organic aerosols in two UK cities, Atmospheric Chemistry and Physics, 2010.

Removing nanoparticles from sewage

The science of the very small could transform society. But tiny nanoparticles' effect on the wider environment isn't well understood. New research points towards a possible cost-effective way to remove nanoparticles during sewage treatment. A team including scientists from CEH found that adding a detergent-like substance to waste makes these nanoparticles clump together into solid sludge, which can then easily be removed. The team has since filed a patent application. Manufacturers worldwide use millions of tonnes of nanoparticles in consumer products each year, and much of this ends up in sewers.

Fate of silica nanoparticles in simulated primary wastewater treatment, Environmental Science and Technology, 2009.

Earth system science

Increasing knowledge of how our complex planet works



Patterns in the waves

NOC scientists have shown that patterns of sea-level change are more important than global averages for understanding the full impacts of melting ice sheets. They have used evidence relating to changes over thousands of years to show that sea level never rises or falls by the same amount everywhere. Sea level goes up if melt water is added to the ocean, but the redistribution of mass causes changes in the Earth's gravity field and flexing of the solid earth which result in a fall of sea level close to the source of the water, and changes to the ocean flow produce even more complicated patterns of sea-level change

Identifying the causes of sea-level change, Nature Geoscience, 2009.

Warming waters release methane into Arctic sea

An international team on the RRS *James Clark Ross* found more than 250 plumes of methane gas rising from the seabed off Spitsbergen – the first time they’ve been discovered so far north. The researchers think the gas is being released from deposits of methane hydrate under the seabed, which are melting as the waters above warm. At present the methane, a powerful greenhouse gas, is dissolving into the water before it reaches the surface, so it isn’t contributing to climate change. But this contributes to ocean acidification, which endangers many marine animals. And if the rate of methane release increases, some may begin to reach the atmosphere and affect the climate. This risks a vicious circle in which rising temperatures cause methane release, driving temperatures higher again.

Escape of methane gas from the seabed along the West Spitsbergen continental margin, Geophysical Research Letters, 2009.

Humans have raised sea level

Human activity is to blame for more than half the sea-level rise since 1850. Using statistical models, NOC scientists found that any change in sea level before 1800 can be explained by natural causes. During the 19th century human influence began to dominate, and directly caused 14-centimetres of the observed 18-centimetre rise during the 20th century. A large part of this results from higher levels of atmospheric CO₂, initially from deforestation and then due to fossil-fuel burning starting with the Industrial Revolution.

Anthropogenic forcing dominates sea-level rise since 1850, Geophysical Research Letters, 2009.



The Print Collector/Photlibrary.com

Observing the atmosphere in Cape Verde

The state-of-the-art Cape Verde Atmospheric Observatory has been recognised by the World Meteorological Organisation as one of 15 Global Atmospheric Watch stations. The observatory can sample reactive trace gases that occur at concentrations as low as one part per billion. NERC’s Surface Ocean Lower Atmosphere Study has measured the sea’s emissions of biologically-produced chemicals that influence the production of particles in the air and the atmospheric lifetimes of ozone and methane. Researchers in the UK SOLAS programme have discovered that organic sea-spray particles are much more important than previously thought for cloud formation over the ocean, and hence the global climate.

Long-term projections of sea-level rise

Work by a NERC-funded scientist at the University of Southampton suggests that – even if atmospheric CO₂ levels rise no further than they are today – sea level could rise much more than the IPCC’s long-term projections. The researchers used statistical techniques to model sea-level fluctuations, and revealed a systematic relationship between air temperature, atmospheric CO₂ concentrations and sea level over the past half million years. When this relationship is applied to today’s CO₂ state under future temperature scenarios, over many thousands of years an eventual sea-level rise of up to 25m is projected. This accords with sea levels around 3 million years ago, when CO₂ levels were indeed similar to today.

Antarctic temperature and global sea level closely coupled over past five glacial cycles, Nature Geoscience, 2009.

CARBON SINKS AND IRON FERTILISATION

Carbon sinks are natural reservoirs that absorb carbon dioxide and keep it locked away indefinitely. Rainforests and the oceans are the Earth’s main carbon sinks, with trees and marine algae taking up carbon dioxide (CO₂) during photosynthesis.

Natural carbon sinks play a major role in cushioning the effects of man-made emissions of CO₂ on the climate. But while carbon sinks currently absorb around half of the CO₂ we emit, recent research has shown that this capacity is slowing.

Because iron stimulates the growth of marine algae some have suggested adding it to the oceans would be one way to reduce atmospheric levels of CO₂.

NERC-funded scientists have been investigating carbon sinks and the effects of iron fertilisation on CO₂ storage by the oceans.

■ Ice retreat makes new carbon sinks in Antarctica

Coastal regions of the Antarctic Peninsula that were covered with ice shelves and glaciers 50 years ago are now absorbing as much as 3.5 million tonnes of CO₂ from the atmosphere every year.

■ Mapping soil carbon from the air

Scientists have shown that it’s possible to substantially reduce the cost of mapping the amount of carbon soils store by measuring the ground’s natural radioactivity from an aeroplane.

■ Iron dust helps oceans to fix nitrogen

Iron from Saharan dust storms helps marine bacteria in the Atlantic Ocean use nitrogen from the atmosphere, which ultimately leads to more carbon being stored in the oceans.

■ Iron regulates North Atlantic carbon sink

Marine algae in the seas around Iceland stop growing before autumn arrives, because there’s not enough iron to sustain them, leading to less carbon becoming locked away in the deep ocean.

Technologies

Developing the tools for innovative environmental science

Of mines and magnetism

Scientists from the Universities of Liverpool and Cranfield have mapped the magnetic properties of Britain's soil for the first time. The soil's magnetic field varies from place to place, and until recently scientists haven't known why. The team changed this by sampling soil all over Britain, measuring and analysing local variables to understand what causes soil magnetism. Using basic data on geology and weather, they can now model an area's likely soil magnetism without the need for samples. The research has helped improve British Army mine detectors, which have often been less effective in very magnetic soils. The soil map let the team advise defence authorities on where to find samples of highly magnetic earth with which to test potentially better designs.

Controlling factors for the spatial variability of soil magnetic susceptibility across England and Wales, Earth-Science Reviews, 2009.



Andrew Chelver's-Reynolds/FReuters

LOOKING WITH LASERS

NERC-supported scientists continue to develop new and more sensitive instruments to tackle previously impossible challenges. One example is lidar – a technology that uses lasers to build up a picture of a distant object. Researchers are still discovering new ways to use it to gather information about hard-to-reach places.

Rainforests and other woodlands are a key carbon sink, and understanding their growth is crucial to predicting how they will respond to climate change. Monitoring large areas of remote forest from the ground is expensive, but airborne or satellite measurements can cover wide areas quickly and cheaply.

Recent highlights include:

- CEH and Bournemouth University scientists have discovered a way to map the undergrowth in woodland, normally hidden beneath its canopy, using airborne lidar.
- Swansea University scientists collaborated with Forest Research to show that lidar on the NASA ICESat satellite can provide similar information on forest canopy height to the results of airborne surveys, but can take more frequent measurements over far wider areas.
- Other CEH researchers used lidar to monitor the ecology of woodland and farmland bird populations. This will give conservationists information they need to help preserve biodiversity.
- Lidar allowed geoscientists at Durham University and partners to monitor ground movements at the surface rupture created by the L'Aquila earthquake over several months. This information will help local authorities prepare for future earthquakes.

All-terrain robot gets ready for British rivers

A new robotic surveyor will map the terrain of the world's waterways in more detail than ever before. Hydrologists and robotics specialists at Aberystwyth University have created the first electronic explorer that's up to the task of moving through and mapping river systems. Based around an amphibious six-wheeled chassis, the ArgoScan system can travel over rough, wet terrain, navigating with a hybrid optical-GPS system that is far cheaper than previous approaches while collecting detailed information on its surroundings using laser instruments. The system has already been tested in a Welsh quarry and is now at work in New Zealand; once finished it will work autonomously to gather more than a billion points of terrain data each day, benefiting researchers' understanding of how river landscapes evolve and how water moves through them. This could help improve predictions of problems like flooding, coastal erosion and landslides.



Aircraft emissions modelled

Researchers at University of Edinburgh have drawn important conclusions about the overall climate impact of aircraft. Aircraft emit nitrogen oxide (NO_x) which generates ozone and over the short term warms the climate. But NO_x also lowers methane levels and this has a cooling influence in the longer term. Modelling showed that the balance of these effects varies according to where the NO_x emissions occur, mainly due to the background levels of NO_x. Nearly everywhere, when the results were integrated over a 100-year timescale, the cooling from methane loss was found to dominate.

Does the location of aircraft nitrogen oxide emissions affect their climate impact?
Geophysical Research Letters, 2009.

Twin Otter enhanced

Clouds exert a powerful influence on the climate but until now it has not been possible to investigate polar clouds in any detail. The addition of an important new instrument to one of BAS's Twin Otter aircraft has made routine measurements of Antarctic clouds possible. The equipment enables scientists to measure the clouds' composition and behaviour at the microscopic level. The new data makes an important contribution to our understanding of atmospheric processes and will improve models of the Antarctic atmosphere.

Magnetic fieldwork

Recent science has improved our understanding of how the Earth's magnetic field changes over time. Researchers at BGS have worked with colleagues at the US National Geophysical Data Center over five years to revise the World Magnetic Model, which is used by organisations including the UK Ministry of Defence and NATO. Millions of magnetic field measurements from satellites and observatories are processed to give an accurate model of the field as it is at present, and how it will develop between now and 2015. The work provides vital information for navigation and positioning systems worldwide, and will help scientists investigate changes in the Earth's deep interior.

Knowledge exchange

Sharing NERC's knowledge, and learning from others



Volunteers help scientists monitor wild animals

Volunteer members of the public have proved invaluable in helping scientists monitor the movement and spread of a range of creatures. Over 1500 volunteers have helped researchers at CEH and the University of East Anglia track the migration of the black-tailed godwit from Iceland to sunny Portugal. Data then collected has helped reveal that the earlier the birds migrate, the better their long-term breeding success. More than 20,000 wildlife enthusiasts have helped monitor the invasive harlequin ladybird's spread across the country. Since its arrival in 2004, the ladybird has spread by an astonishing 100 kilometres a year.

Christiane Eisler/Transistill Pictures

Pheromones boost bee traffic

Researchers have found that exposing bumblebees to an artificial pheromone, which tells them to leave the nest to look for nectar, boosts the amount of traffic between nests and a foraging site. These findings could be used to improve foraging activity and pollination in greenhouse bee colonies, which are used for growing many kinds of fruit and vegetables – especially in young colonies that are reluctant to start foraging after being introduced to a crop. The scientists, from Queen Mary, University of London, also found that bumblebees rely on the floral scent carried by nest mates to point them towards the best flowers.

Potential application of the bumblebee foraging recruitment pheromone for commercial greenhouse pollination. Apidologie, 2009
How floral odours are learned inside the bumblebee (Bombus terrestris) nest. Naturwissenschaften, 2009.

Sharing knowledge on the ground beneath our feet

NERC-funded researchers are making greater efforts than ever before to share their expertise with the public.

For example, BGS's OpenGeoscience website provides high-quality geological maps, data and images free of charge over the internet. The website lets people look at their area's geology at street-level scale, and gives teachers access to an unprecedented range of material for education uses. It has already attracted many millions of visitors.

'It is a world first and, in my opinion, a development of major public interest by literally putting geosciences on the map,' says Dr Steve Drury, Senior Lecturer in Remote Sensing at the Open University. 'It will become a kind of 'GoogleRock' for a great many people.'

Another BGS dataset informs the public about potentially dangerous disused mines in Northern Ireland, while a third makes available information on areas that may be susceptible to subsidence or collapse due to undermining for materials other than coal.

www.bgs.ac.uk/opengeoscience

LAYING THE GROUNDWORK FOR MARINE POLICY

This year NERC scientists have continued to lead in rigorous, high-quality climate science that will inform policy-makers and industry. As well as work for the IPCC, a major examination of the vulnerability of the UK coastline and adjacent seas to climate change contributed to the 2009 UK Climate Projections (UKCP09).

NERC's marine research has underpinned significant developments in marine policies this year.

- The NERC marine science community made a major contribution to the new Marine and Coastal Access Act and Scottish Marine Act, which will transform the management and protection of the seas around the British Isles. The Act created the Marine Management Organisation (MMO) which will oversee marine planning, licensing and conservation in England, and will rely in large part on NERC marine science.
- NERC marine institutes collaborated with other partners on *Charting Progress 2*, the second five-yearly review of the state of UK seas, due for publication in summer 2010.
- BAS research contributed to the designation of the world's first entirely 'high seas' marine protected area (MPA). The South Orkney Islands southern shelf MPA will enable scientists to monitor the effects of human activities and preserve vulnerable sea life in the Southern Ocean.
- Through the National Marine Coordination Office, NERC played a key role in developing the first UK Marine Science Strategy, which will ensure scientists and policy-makers work together to tackle long-term challenges. NERC also provides a direct staff contribution to the Secretariat of the Marine Science Coordination Committee.
- In responding collectively to consultations, NERC has informed major marine policy developments internationally, including the proposed establishment of a protected area in British Indian Ocean Territory, the reform of the Common Fisheries Policy, and implementation of the European Marine Strategy Framework Directive.



Steve Tremblay/FLPA



Bosphorus/Jeffrey Roman/Still Pictures

NERC AND THE MEDIA

NERC-funded science makes the news nearly every day, but this year the work of our scientists achieved prime-time TV slots and high-profile media coverage that reached the public and policy-makers alike. NERC-funded scientists have:

- Advised the BBC during six months of filming the documentary series *Banded Brothers: the mongoose mob*, ensuring the effective communication of the science behind these engaging creatures.
- Assisted with filming stalk-eyed flies for the BBC's production *Life*, narrated by Sir David Attenborough – the programme highlighted these odd-looking insects as a classic example of sexual selection.
- Gained UK and overseas media coverage, and a slot on BBC TV's *Countryfile*, with news of new work on endocrine-disrupting chemicals, pollutants that have potentially far-reaching implications for animal and human health.
- Contributed to the BBC's popular series *Coast*, explaining how clouds form around particles created by the emission of iodine from seaweeds.
- Created animations of the deadly 'rotor' effect of turbulence around the Sierra Nevada mountain range, which were used in Channel 4's TV documentary *The Mystery of the Nevada Triangle*.
- Achieved global media coverage of work on the influence of the Amazon rainforest on climate change, including interviews for Channel 4 News, NPR radio, Discovery Channel News and discussions on BBC News *Green Room*.



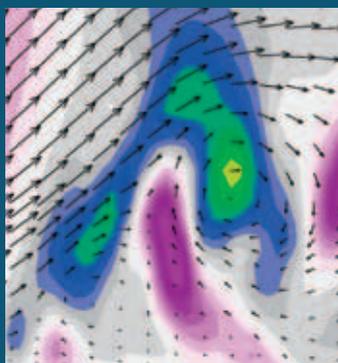
Mark Maestwan/Photolibary.com



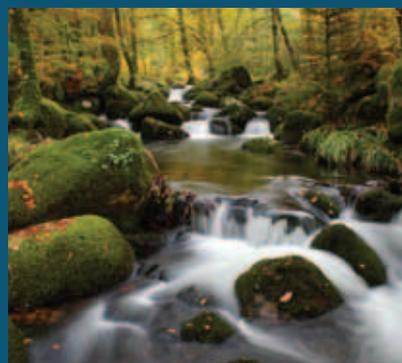
Sam Cotton



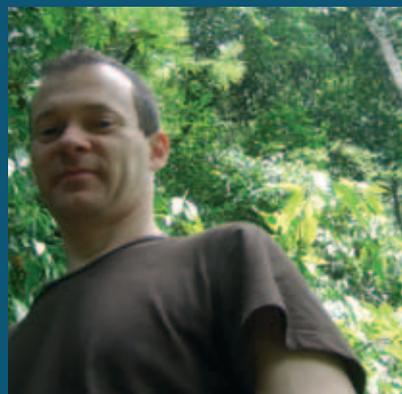
Dr Jeremy Burgess/SPL



Ralph Burrows/NCAS



Charles R Tyler



Margotie Restrepo

Clockwise from top left:

- Stars of the BBC series Banded Brothers: The mongoose mob.*
- Dr Sam Cotton's stalk-eyed flies were filmed by the BBC for Life.*
- Endocrine-disrupting chemicals threaten the health of UK rivers like the Dart in Devon.*
- Professor Oliver Phillips in the Amazon rainforest.*
- As seen on Channel 4's The Mystery of the Nevada Triangle. The yellow area marks the centre of a 'rotor', dangerous turbulence not generally visible to aircraft.*
- BBC's Coast delved into the science of iodine emissions and seaweed.*

Planning benefits for London

Dr Richard Dawson, a researcher from the Tyndall Centre for Climate Change Research, received NERC funding for a four-week placement with the Greater London Authority (GLA). Richard used the Centre's Urban Integrated Assessment Facility – which quantifies the impacts of climate change on cities – to explore the climate impacts and energy implications of the London Spatial Development Plan. The placement demonstrated the benefits of bringing different stakeholders together to develop a common understanding of the consequences of long-term change. Dawson is continuing this work on sustainable planning in cities, with the GLA as stakeholder advisors, through a fellowship funded by the Engineering and Physical Sciences Research Council.

Richard Dawson and colleagues at the Tyndall Centre.



Trends in Research Council income from the private sector (£m)

	2007-08	2008-09	2009-10
UK private sector	5.4	4.8	5.1
Overseas private sector	6.9	8.2	12.3
Total	12.3	13.0	17.4
Total at 2009-10 prices	12.9	13.3	17.4

UK figures include Integrated Ocean Drilling Programme income to BGS.

Value of earned income (contract research) by research centres (£k)

	2008-09	2009-10
BAS	1,963	1,819
BGS	16,934	21,216
CEH	9,993	9,325
POL	1,786	1,955
NOCS	3,436	4,450
Swindon Office	1,086	321
Total	35,198	39,086

Figures do not include funding received from other bodies classified as financing (see note 3).

Royalties and licence income by research centres (£k)

	2007-08	2008-09	2009-10
British Antarctic Survey	31	23	11
British Geological Survey	2,279	1,830	1,628
Centre for Ecology & Hydrology	405	253	177
Proudman Oceanographic Laboratory	48	45	113
Swindon Office	5	0	4
Total	2,768	2,151	1,933

Patents filed

2007-08	10
2008-09	7
2009-10	11

Trends in publications with industry

Funding type	2009			2010		
	Number of papers in ISI-listed journals	Number of papers with a private co-author	%	Number of papers in ISI-listed journals	Number of papers with a private co-author	%
Responsive mode	1,538	59	4	1,670	40	2
Research programme	1,921	63	3	1,905	101	5
National capability	631	33	5	761	28	4
Total	4,090	155	4	4,336	169	4

Listing by the Institute for Scientific Information (ISI), now the Thomson Reuters Web of Science database, is used to indicate an influential, high-quality journal. Data supplied by research community via NERC Research Outputs Database with some double counting due to collaboration across funding types.

People

Developing the skills and experience of a world-class community of scientists



Richard Bardgett

NERC remains committed to encouraging and helping scientists communicate the excitement and value of their work, through its regular two-day Science Communication training course. The courses train 100 researchers every year.

To coldly go...

Three NERC-funded scientists joined a nine-strong team on a major Arctic expedition this spring. As part of explorer Pen Hadow's Catlin Arctic Survey, the researchers endured temperatures as low as -40°C to investigate climate change and the effects of carbon dioxide on the Arctic Ocean. After a gruelling training programme, Dr Helen Findlay from PML, Dr Ceri Lewis from the University of Exeter and Dr Laura Edwards from the University of Wales, Bangor, spent six weeks camping on floating sea ice. The Arctic is one of the most challenging environments for scientific fieldwork, but thanks to the skills of the polar support team the researchers were able to gather unique and important data just 750 miles from the North Pole.

Dr Ceri Lewis retrieves specimen bottles from an ice hole.

Martin Hartley www.martinhartley.com



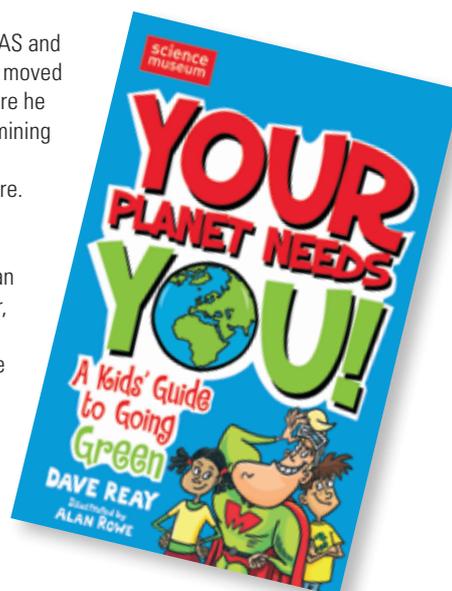
Select committee tweets

A volcanology postgraduate from the Department of Earth Sciences at the University of Oxford, David Ferguson spent three months on an internship with the House of Commons Science and Technology Committee this year. As well as writing MPs' briefings and helping to produce reports, David reached new audiences by regularly posting links and highlights of his work on Twitter. The policy internship scheme gives NERC PhD students first-hand experience of how Parliament works and how science contributes to policy and legislation. 'As one of the committee's main functions is to oversee the Government's use of science, much of their work involves exposing areas where scientific evidence is not being used properly,' said David.

Dr David Reay from the University of Edinburgh led a 60-strong delegation to the Copenhagen climate change conference and, together with the Scottish Government and British Council, organised the summit's 'Scotland Day'. Back at home David was busy building on the success of his book *Climate Change Begins at Home*. His new title, *Your Planet Needs You!*, published by Macmillan, takes children on a journey with Maximus, Saviour of Worlds, collecting practical tips for energy conservation in a bid to stop the planet heating up before it's too late. While Maximus has been saving the world, David has also edited a book on methane and climate change – for grown-ups this time.

Originally a marine biologist, Dave Reay graduated from Liverpool University in 1994

before gaining a PhD with BAS and Essex University. In 2001 he moved to Edinburgh University where he became a NERC Fellow examining greenhouse-gas emissions from wetlands and agriculture. In 2008 Dave became the university's first lecturer in carbon management. He is an accomplished science writer, effectively communicating climate-change issues to the public and specialists alike. Among other endeavours he maintains a climate-change website, Greenhouse Gas Online.



Staff, students and fellows

	2007-08	2008-09	2009-10
Directly employed staff	2,573	2,459	2,473 ¹
Staff in HEIs ²	1,300	1,240	1,218
Fellows	100	87	86
PhD ³	969	988	1,017
Masters	371	362	382

Notes

- ¹ This figure excludes 27 employees transferred to the Research Councils Shared Services Centre (SSC) and seconded back to NERC, or who are due to move to SSC but have not yet done so. The figure for 2008-09 excludes 87 such employees.
- ² Staff in higher education institutions employed on research grants.
- ³ These data are based on numbers of students directly funded by NERC. They do not include studentships funded through cross-council programmes where another research council administers the award.



National capability

Investing in essential infrastructure to support environmental science

Water standards defined

The UK recognises that good water flow is fundamental to the ecological health of its rivers, so any water removal, storage or discharge must be regulated. CEH led a large team to review the best science, to define the maximum amount of water we can take from different rivers while still meeting our ecological goals. This was used by the UK authorities to determine practical regulatory standards and meet legislative requirements such as the European Water Framework and Habitats Directives. The Environment Agency has revised its procedures to include these standards. This work has major implications for water companies, farmers and power generation companies.

Unravelling the genes of ancient people

For the first time ever, an international group of scientists has managed to sequence most of an ancient human's genome. Using a 4000-year-old lock of hair found in a museum basement, the researchers recovered nearly 80 per cent of the genetic material of a palaeo-Eskimo man from the Saqqaq culture – the earliest known settlers in Greenland. The breakthrough provides evidence for an early human migration from Siberia into the Americas some 5500

years ago, independent of the move that gave rise to modern Native Americans and Inuit. Researchers at the NERC-funded Oxford Radiocarbon Accelerator Unit were among the paper's authors.

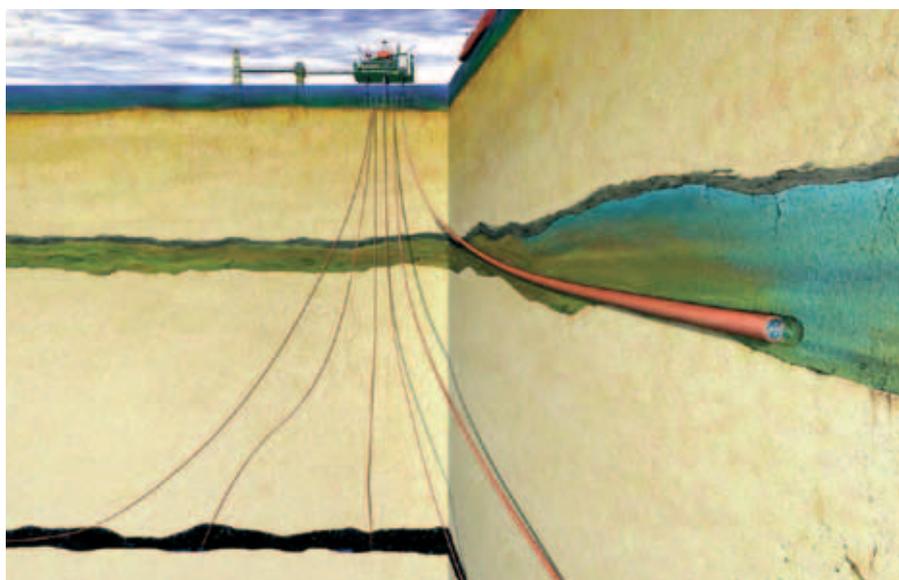
Ancient human genome sequence of an extinct Palaeo-Eskimo, Nature, 2010.



Storing carbon in Scotland

May 2009 saw the launch of a research study into the opportunities for CO₂ storage around Scotland, which was led and managed by BGS on behalf of the Scottish Centre for Carbon Storage. This comprehensive report includes an appraisal of CO₂ sources, potential storage sites beneath the North Sea, options for transporting CO₂, and economic models for Carbon Capture and Storage projects. The research was funded by a consortium of industry stakeholders and the Scottish Government and significantly raised the profile of BGS in Scotland and northern England.

Opportunities for CO₂ storage around Scotland – an integrated strategic research study, Scottish Centre for Carbon Storage, 2009.



Fate of repository gases

BGS scientists are working closely with a range of partners to understand how gases generated by radioactive waste stored deep underground move through surrounding rocks. Many European countries plan to dispose of radioactive waste in underground repositories – essentially a series of engineered barriers and rocks which prevent radiation escaping into the environment. But over thousands of years, radioactive waste generates gases. Understanding how these gases move through the repository and the rocks around it will help engineers design repositories and allow regulators to manage the waste safely, establishing the EU as a world leader in this field.

Crater microbes could help find life on Mars

The crater left behind when a two-kilometre meteorite smashed into Canada's Devon Island almost 40 million years ago was quickly colonised by microbes. The bacteria took up residence in the hydrothermal system of hot water and crushed rock created by the impact, getting their energy by turning sulphate into sulphides. An international team of researchers used the NERC-funded Isotope Community Support Facility to show that these sulphides could only have been produced by bacteria. They say similar impacts on Mars could also have left behind long-dead bacterial ecosystems, whose traces could still be found today on the red planet's surface.

Sulfur isotope signatures for rapid colonization of an impact crater by thermophilic microbes, Geology, 2010.

Partnerships

Building strong national and international relationships

Tick science leads to new anti-clotting drug

Research on how ticks feed on their hosts' blood has led to the development of a new anti-clotting drug called Variegin. This could help prevent strokes or heart attacks. Centre for Ecology & Hydrology scientists worked with Slovakian colleagues to isolate a natural anti-coagulant from ticks' saliva – a compound that helps keep hosts' blood flowing so the insects can drink it. They then collaborated with snake venom experts from the University of Singapore to make the drug more potent; in tests on zebrafish, it completely prevented thrombosis. Patent applications have been filed, and the drug is helping create a new spin-out company.

Marine renewable energy

Sea Mammal Research Unit scientists have worked closely with the manufacturers of the world's first commercial demonstrator tidal-power turbine to minimise its effect on marine mammals. After analysing the movement of seals around the turbine, the researchers created a sonar system which detects seals, porpoises and fish near the turbine in Strangford Lough, Northern Ireland. When the system senses these animals, the turbine can be either slowed down or shuts off temporarily. The device has helped reassure regulators that the turbine doesn't harm local sea life.



Marine Current Turbines Ltd

Horizon-scanning future issues

A group of scientists worked closely with policy-makers, conservation groups and other NGOs to identify 15 hot topics that could become environmental threats or opportunities, as well as possible responses to them. The exercise predicted, for example, that bacteria-killing nanoparticles, used to keep clothing germ-free, could also cause problems for microbes in natural environments. On the other hand, mobile phones could develop into conservation tools for monitoring and recording environmental data. Horizon scanning aims to prevent future problems arising. Without it, scientists failed to anticipate the impact of the push for biofuels on crucial habitats like rainforests.

A horizon scan of global conservation issues for 2010, Trends in Ecology & Evolution, 2009.

Mapping carbon in Africa

A NERC-funded researcher helped the government of Gabon to produce a carbon map of the country, which was presented at the Copenhagen summit. Simon Lewis from the University of Leeds was identified for this role as a result of his work on carbon storage in African forests. Simon also provided Gabon with technical advice and acted as a delegate for the country at the summit.

Industry collaborates on sustainable roofs

Green-roof technology is a growing industry in the UK and Europe, and its many benefits include improved urban drainage, carbon storage and new wildlife habitats. Sheffield University leads research in this field and this year collaborated with an industrial partner to test various roofing materials against

damage by plant roots. The partner invested £36,000 in the project and plans to patent the most resistant material as a result of the work. Green roofs are important elements of sustainable construction, but currently there is no national standard for their implementation or maintenance.

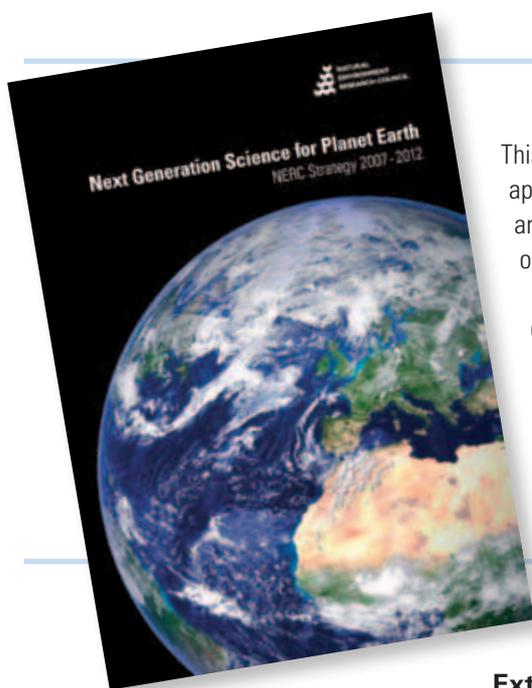


Edward Bent/Ecoscena

Building capacity in developing countries

BGS provides training programmes to build geoscience capacity in developing countries including Afghanistan, Montserrat, Ethiopia, Ghana, Nigeria, Papua New Guinea, Malawi and Mozambique. This initiative is contributing to economic growth in the developing world. For example, BGS helped local counterparts reassess and promote the Aynak copper deposit in Afghanistan. Development of this world-class deposit will help raise around £30 billion for the Afghan government.

Delivering the strategy



This is an overview of NERC's expenditure, funding, environmental impacts, grant application success rates, health and safety, and freedom of information requests. These are followed by financial background information, a management commentary and an outline of organisational changes.

The Natural Environment Research Council (NERC) was established by Royal Charter on 1 June 1965 under the Science and Technology Act 1965. NERC's mission is to gather and apply knowledge, create understanding and predict the behaviour of the natural environment and its resources, and communicate all aspects of its work.

In 2007, NERC launched its strategy *Next Generation Science for Planet Earth, 2007-12*. To order a copy of the strategy see: www.nerc.ac.uk/publications.

External funding

Funding from outside NERC meets the costs of commissioned and co-funded research carried out by NERC's centres for government departments, other public bodies, industry, the European Commission, and international and overseas organisations. This is a significant funding stream for many of NERC's centres and it is an important means of transferring knowledge to users.

Openness and transparency

NERC is subject to the Freedom of Information Act 2000 and also the Environmental Information Regulations 2004, which provide broadly similar access rights to the Act but

relate specifically to information about the environment. We work with the other research councils to ensure a consistent approach to open-access legislation on key business activities such as peer review.

During 2009 we answered 36 requests for information under the legislation, on subjects ranging from our research outputs to business policy. We answered 86 per cent of our requests, many of which were complex, within the statutory time limit.

Much of our information is readily available without a specific Freedom of Information Act request; for details see our publication scheme at www.foi.nerc.ac.uk. More information: Colin Pelton, cdp@nerc.ac.uk

Requests made under the Freedom of Information Act

	2009
Business policy and operations	13
Research outputs	11
Research policy and operations	8
Funding applications	3
Contracts	1
Total	36

Trends in annual capital investment (£m)

	2006-07	2007-08	2008-09	2009-10
Land, buildings and Antarctic stations	12.0	19.0	12.0	24.9
Plant and equipment	8.4	11.1	11.9	9.7
Ships and aircraft	14.5	2.9	1.7	3.6
Motor vehicles	1.8	0.7	0.5	0.6
RCUK Shared Services Centre (i)	-	3.2	6.1	2.1
(Profit)/Loss on disposal of fixed assets (ii)	-0.3	-1.9	0.1	-0.7
Capital grants	13.2	11.6	13.3	18.5
Total	49.7	46.7	45.7	58.7

Notes:

- 2008-09 figures include £1.6m for RCUK SSC Ltd shares purchased during the year.
- from 2007-08 all disposals of fixed assets classified as capital.

Energy saving

A new NERC energy policy, approved by Council in 2009, is the driving force for energy saving. This is a formal policy to reduce carbon emissions across NERC by actively managing energy through monitoring, targeting and reporting of consumption and carbon emissions. This is in preparation for the mandatory government Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES) which started 1 April 2010, and will be the driving force for continuous reduction of carbon emissions throughout NERC.

We are also aiming to achieve the Carbon Trust Standard, a voluntary accreditation scheme that recognises ongoing carbon reduction. The assessment for this will take place in 2010 and will benefit NERC by improving its performance in the CRCEES over the coming years.

Delivery of the energy policy so far includes the installation of automatic metering across the NERC estate. The data collected is encouraging active energy and water management.

The National Oceanography Centre, Southampton, completed its sea-water cooling system, with the aim of reducing electricity consumption by 4 per cent. Further improvements have also been made by rationalising the server and improving the airflow between units. Southampton has also installed a trial solar thermal system to supply hot water to the sports hall changing rooms, which will determine the feasibility of further installations of this technology.



Grants, fellowships and studentships

We continue to monitor the success rates of grant and fellowship applications to ensure that we do not discriminate against any applicants. Trend data have shown that the proportion of women applying for research grants, and their subsequent success rate, remains relatively constant. However, the number of women in the system remains low.

The 2009-10 fellowship round was extended because further interview dates had to be arranged, due to disruption to air travel. Therefore, the success rate data shows the top 30 candidates who were offered fellowships. Female candidates have again been more successful than male candidates this year and were offered 43 per cent of the fellowships. In the last five competitions, since 2005-06, female candidates have had a lower success rate than male candidates only once (in 2007-08), but female candidates made up on average

33 per cent of candidates over that period.

For PhD and masters courses, studentships are awarded to universities and NERC research centres. Institutions select students within set eligibility criteria.

Although there are yearly fluctuations, on average 50 per cent of studentships are awarded to females. The current PhD stock is 51.5% female. Females made up 54 per cent of masters students in 2008-09 and 45 per cent in 2009-10.

Staff

NERC embraces diversity and equality. It has introduced a wide range of measures to ensure individuals can contribute their skills, knowledge and experience to the organisation while maintaining a work/life balance.

We actively encourage parents to return to work by providing flexible working arrangements. We continue to monitor all recruitment exercises to ensure

Responsive standard and small grant applications and success rates

	2007-08	2008-09	2009-10
Number of applications	848	923	950
Number of awards	184	210	185
Total £k	41,837	47,651	43,523
% success rate	22	23	19

Note: Statistics show joint applications from two or more research organisations as one application.

Success rates for grants by gender

	2007-08		2008-09		2009-10	
	Men	Women	Men	Women	Men	Women
Number of applications	884	196	970	221	1013	252
Number of successful applicants	243	36	248	45	246	39
% successful applicants	27	18	26	20	24	15

Success rates for fellowships by gender

	2007-08		2008-09		2009-10	
	Men	Women	Men	Women	Men	Women
Number of applications	92	52	122	44	128	59
Number of successful applicants	20	5	20	10	17	13
% successful applicants	22	10	16	23	13	22

demographically fair representation, and all promotion rounds are scrutinised for fairness.

In addition we promote personal development, embracing initiatives such as sabbaticals, secondments, further education and a range of short courses. By investing in individuals, we continue to foster potential across the organisation and ensure that NERC has the necessary skills, knowledge and experience to meet future challenges.

Health and Safety

This report covers the 15-month period from 1 January 2009 to 31 March 2010, as reporting will in future cover a financial year. The period has been one of consolidation following major changes to health and safety personnel in the previous year. The number of reportable incidents in 2009 remained at the same low level as in the previous calendar year. There were no HSE inspections or enforcement actions during this period.

Audits were undertaken on Workshops and on Chemicals in Laboratories, the latter resulting in the preparation of guidance on storage of chemicals in laboratories. The basis for a new programme of audits taken from three elements – general site audits, topics of high risk and topics of local concern – on a three-

year rolling plan has been agreed.

The total number of work-related accidents and cases of ill health reported in 2009 was 293, which is slightly lower than the 300 seen in the previous two years. In the first quarter of 2010 there were 49 work-related accidents and cases of ill health reported.

In 2009 and the first quarter of 2010 the number one cause of all injuries was 'slips, trips and falls', followed by 'cut or stabbed with a sharp object' with the third most common being 'collided with something fixed or stationary'. Between them, these three categories accounted for 45 per cent of the injuries and incidents of ill health that were reported.

Five occurrences were reported under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) in 2009, the same as in 2008, with four reportable events in the first quarter of 2010. This would give an annualised figure of 7.6 reportable events which is well within the range of reportable events seen in the last ten years (maximum 10, minimum 4) and close to the ten-year average of 7.2.

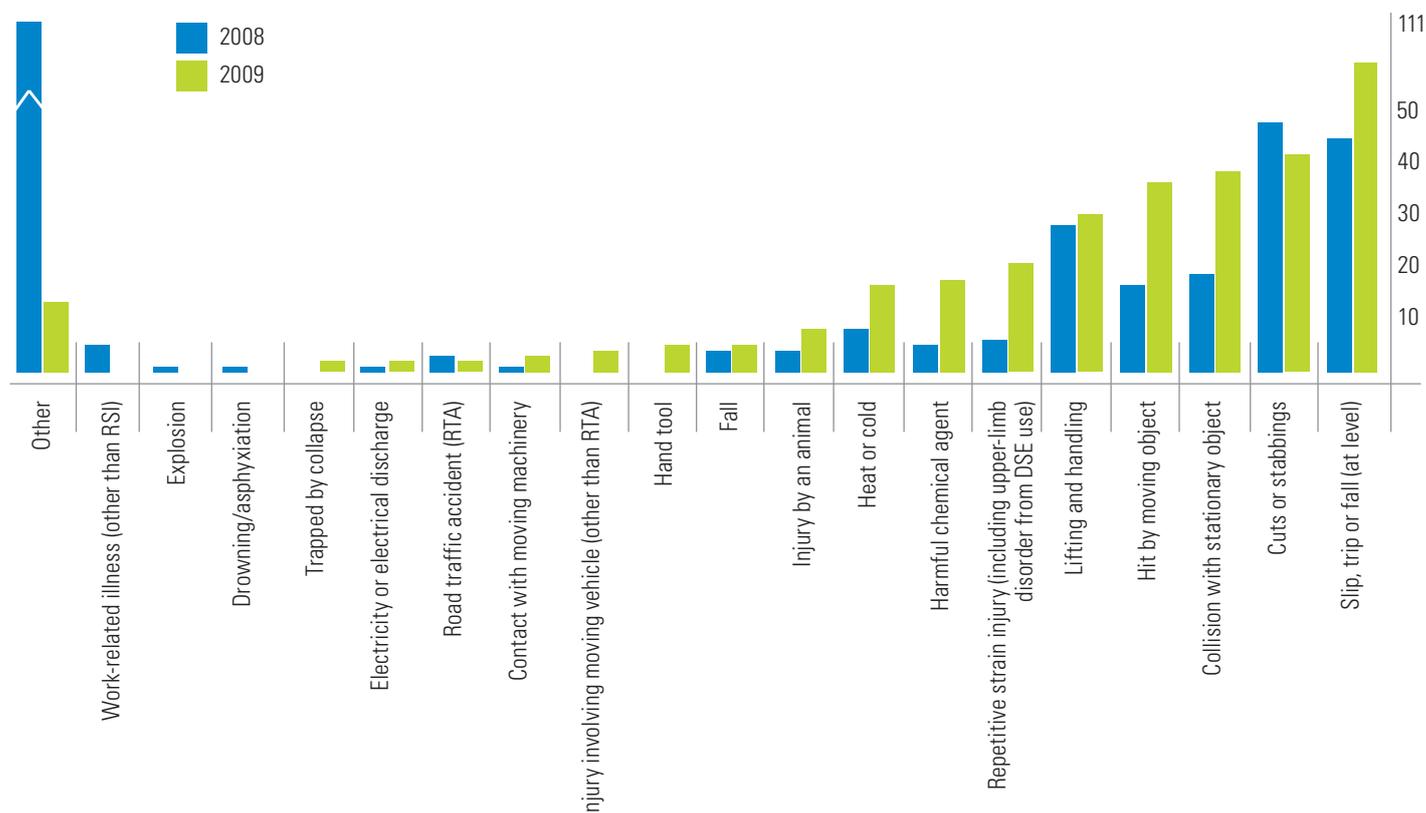
Of the nine reportable injuries, three were related to lifting and handling activities and three to slips, trips and falls on the same level. Five resulted from 'over three-day lost time

injuries', and three arose from major injuries involving broken bones; the final one was a notifiable disease.

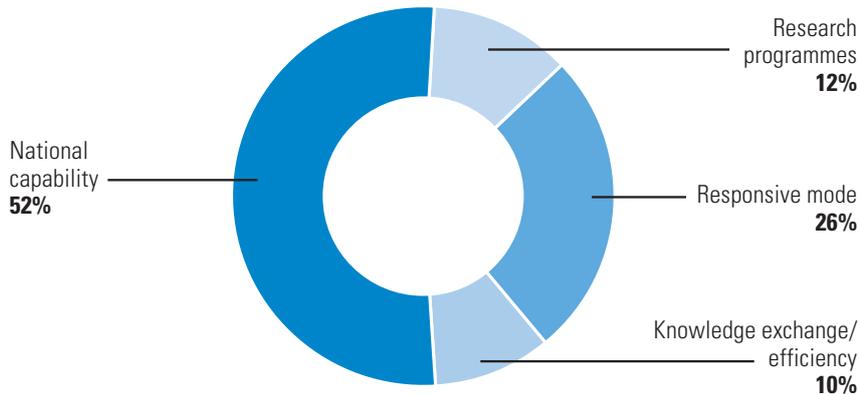
Data was collected for the first time in 2009 on a number of other events. There were six injuries resulting in between one and three days off work. There were seven occurrences on ships that were reportable to the Marine Accident Investigation Board (MAIB) and two occurrences on aircraft reportable to the Civil Aviation authorities. There were also two events overseas that would have been reportable to the HSE had they occurred within the UK. There were 270 incidents and near misses reported in the 15-month period. When compared to the number of injuries reported this gives a ratio of 0.8 incidents/near misses reported to every injury.

There was one potentially serious incident involving a member of NERC staff working overseas in a cold climate. The field hut being used had a faulty stove flue which resulted in carbon monoxide fumes being released into the hut. No lasting ill effects resulted but it highlighted the risk of carbon-monoxide poisoning which affects much work in cold climates, especially when living in tents.

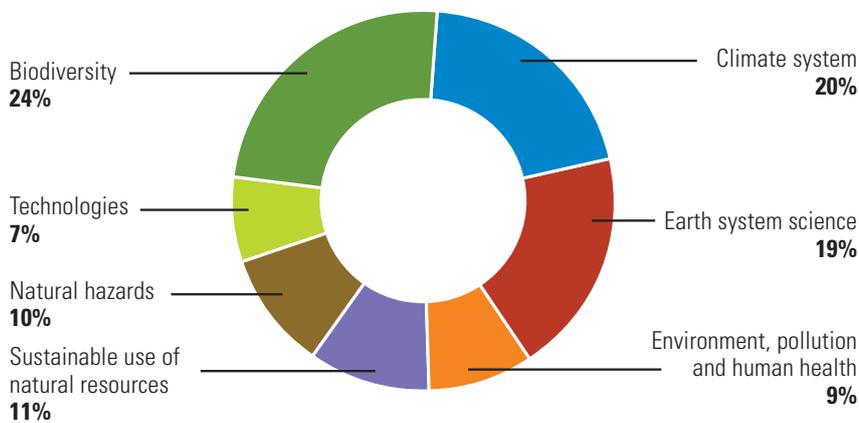
ACCIDENTS



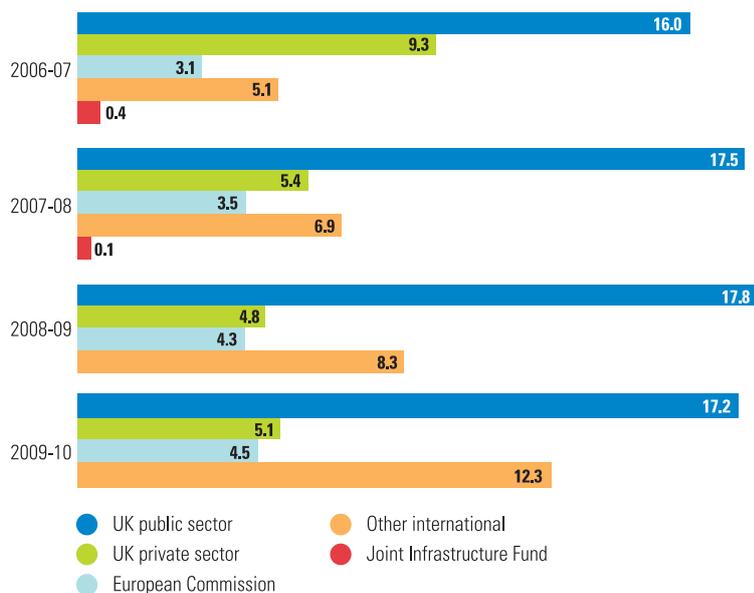
Allocation of science budget by funding stream



Allocation of science budget by science theme



External funding for research (£m)



Note: Figures no longer include funding received from other bodies categorised as financing (see note 3).

Environmental accounts and greening of NERC

We have continued to implement initiatives over the year to reduce our impact on the environment. Work has been completed on a variety of projects including the successful uptake of automatic meter readings for all main utilities and further sub-metering across much of the NERC estate. The British Antarctic Survey has completed work on a number of projects, including sustainable energy implementation at the Cambridge site and at the Antarctic bases, including improved lighting, solar hot water and variable speed drives on the water systems. The British Geological Survey (BGS) has completed projects for new efficient lighting systems at Keyworth, as well as an electronic composter and new insulation works at the Eskdalemuir site. The National Oceanography Centre (NOC) has completed work on the Sea Water Cooling System and other projects such as the installation of a solar thermal system, lighting sensors and the installation of boiler economisers.

Upcoming projects include cycle sheds at the British Antarctic Survey, at the Southampton site of the National Oceanography Centre and at the Edinburgh site of the Centre for Ecology & Hydrology. We are also planning a radio-nucleotide extraction project at the NOC Southampton site. Voltage optimisation has been approved as an energy-efficiency measure across the estate for the near future.

NERC is on its way to adopting the ISO 14001 standard for environmental management across its whole estate. In 2009-10, Polaris House in Swindon achieved this standard, and it is planned that the Centre for Ecology & Hydrology will obtain the certification in the near future. All other research centres have continued to comply with the standard by undertaking internal and external audits and continuing to reduce their impacts on the environment. This has also been shown in the management of waste across the estate, which has been very successful with increased uptake of recycling and composting facilities.

NERC has been promoting the uptake of sustainable transportation with the introduction of the Cycle to Work Scheme and the installation of cycle sheds across the estate to encourage more employees to participate in the scheme. A new Transport Policy is currently under development, and will be introduced in the near future.

NERC has been working towards the Carbon Trust Standard, which recognises ongoing carbon reduction, and aims to achieve this certification through the assessment of our carbon emissions in mid-2010. The emissions

released by NERC have fallen in the last three years, as seen in the carbon-emissions table. NERC's CO₂ emissions in 2009-10, measured according to the Carbon Trust Standard, have fallen by approximately 9 per cent compared to the average for the previous two financial years, in line with the NERC Energy Policy. This will benefit NERC over the next few years with regards to its participation in the Carbon Reduction Commitment Energy Efficiency Scheme. This was launched by the Government in 2010 for all large non-energy-intensive organisations in the UK. The scheme aims to reduce carbon emissions by encouraging the uptake of energy-efficiency projects and by requiring each organisation to report and pay for its carbon emissions each year.



The Sea Water Cooling Systems Heat exchanger at the National Oceanography Centre, Southampton.

Carbon-dioxide emissions for NERC estate – UK-based operations (in tonnes)¹

Category ²	2007-08	2008-09	2009-10
Electricity	9,501.94	10,160.96	9,484.71
Gas	4,691.17	4,434.83	4,025.64
Oil	239.51	184.63	199.65
Owned transport ³	2,148.35	2,843.55	1,815.42

Notes:

1. The above information is being used for the Carbon Trust Standard and will be audited by Carbon Trust in 2010 for all NERC UK-based operations. It was calculated using the Carbon Reduction Commitment Energy Efficiency Scheme Conversion Factors used for tonnes carbon dioxide.
2. Categories relate to UK based NERC operations only (excluding head office based in Swindon and operations in Antarctic).
3. Owned transport includes all NERC fleet vehicles and UK-based planes.

Carbon-dioxide emissions for non-UK-based NERC aircraft and ships (in tonnes)¹

Category	2007-08	2008-09	2009-10
NERC aircraft	2,711.89	2,293.11	2,241.04
NERC ships	29,839.26	34,297.27	33,239.46

Notes:

1. Carbon dioxide emissions were calculated using the Defra Greenhouse Gas Conversion Factors for Company Reporting 2009.

The following table shows the total emissions to air from the impacts of operations included above, by category of emission in tonnes of carbon dioxide equivalent (tCO₂eq).

	2007-08	2008-09	2009-10
Carbon dioxide	46,420.23	51,921.25	48,764.89
Nitrous oxide	224.09	213.04	199.50
Methane	2,939.43	3,103.68	3,260.69
Total greenhouse gas	52,509.39	54,893.20	54,622.44
Therms (electricity and gas) ³	1,465.65	1,459.44	1,341.16

Notes:

1. The Carbon Reduction Commitment Energy Efficiency Scheme Conversion Factors were used for tonnes carbon dioxide (tCO₂).
2. Defra Greenhouse Gas Conversion Factors for Company Reporting 2009 have been used for all other emissions.
3. Therms only include electricity and gas due to data collection units. Therm is a unit of heat equal to 100,000 British thermal units.

Carbon Reduction Commitment costs

(Costs for emissions under the CRC if NERC had to purchase allowances in those years. This will be used to help forecast purchases in 2011)

	CRC cost
2007-08	£173,191.43
2008-09	£177,365.08
2009-10	£164,520.05

Notes:

1. Based on cost of £12 per tonne of carbon dioxide through the Carbon Reduction Commitment Energy Efficiency Scheme.
2. Only includes emissions from electricity, gas and oil (not transport).

HOW WE SPENT THE SCIENCE BUDGET (£m)*

2009-10
Outturn

Research Programmes

Aerosol Impacts	0.843
Autosub Under Ice	0.099
E Science	0.141
Earth System Modelling Strategy	0.304
Ecology & Hydrology Funding Initiative	1.281
Ecosystem Sustainability and Poverty Alleviation	0.300
Environment and Human Health	0.428
Flood Risk in Extreme Events	1.588
Genomics	1.102
Integrated Ocean Drilling Programme	4.485
International Polar Year	0.640
Joint Climate Research Programme	0.117
Lowland Catchment Research	0.105
Quantifying the Earth System	4.472
Quantifying Uncertainty	0.123
Rapid Climate Change and the stability of the thermohaline circulation	2.628
Rural Economy & Land Use	1.088
Strategic Oceans Funding Initiative	1.365
Surface Ocean Lower Atmosphere Study	1.337
Taxonomy & Systematics	0.066
Technology – Proof of Concept	0.546
Towards a Sustainable Economy	1.307
Urban Atmospheric Science	0.926
Virtual Observatory	0.055
Other theme actions	0.062
Other programmes – final balances	0.061

Other Programmes

Earth observation programmes	1.473
Eurocores – Biodiversity	0.083
Eurocores – Mineral Sciences	0.021
European Space Agency	63.528
International subscriptions	1.552
Knowledge exchange	8.094
Living with Environmental Change Directorate	0.212
Theme leaders	1.460
Other programme activities	2.044

Collaborative Centres

Centre for Population Biology	1.369
Marine Biological Association	0.874
MBA library	0.350
National Centre for Atmospheric Science	7.885
National Centre for Earth Observation	5.669
Oceans 2025 coordination	0.117
Plymouth Marine Laboratory	4.802
Scottish Association for Marine Science	2.362
Scottish Marine Research Unit	1.257
Sir Alistair Hardy Foundation for Oceanographic Science	0.399
Tyndall Centre for Climate Change Research	0.723
UKPopNet	0.403

HOW WE SPENT THE SCIENCE BUDGET (£m) *cont.*

2009-10
Outturn

National Capability – Swindon Office

Airborne Remote Sensing Facility	0.874
Facility for Airborne Atmospheric Measurement	1.478
High Performance Computing	4.272
Marine Barter Bank	0.142
Services and facilities	9.060
Solar Terrestrial Physics	0.654
Other capital grants	0.052

<i>Facility for Airborne Atmospheric Measurement</i>	<i>0.084</i>
<i>Services and facilities</i>	<i>0.142</i>

Responsive Mode Grants

Antarctic Funding Initiative (AFI)	2.410
Capital grants	2.300
Consortium grants	10.256
New investigator	1.217
Small grants	2.264
Standard grants	43.322

Responsive Mode Training

Fellowships	6.196
Studentships	23.835

British Antarctic Survey

National capability	36.378
Research programmes	4.340
Antarctic bases environmental clean-up	0.424
<i>Antarctic & Marine</i>	<i>0.567</i>
<i>Halley 6</i>	<i>4.859</i>
<i>Core capital</i>	<i>2.552</i>

British Geological Survey

National capability	18.214
Research programmes	3.060
<i>Buildings maintenance</i>	<i>1.659</i>
<i>Keyworth phase II building</i>	<i>2.927</i>
<i>William Smith building</i>	<i>0.438</i>
<i>Core capital</i>	<i>2.211</i>

Centre for Ecology & Hydrology

National capability	17.805
Research programmes	1.435
<i>Core capital</i>	<i>3.665</i>
CEH transition and integration	4.061
<i>CEH transition and integration</i>	<i>10.136</i>

2009-10
Outturn

National Oceanography Centre Southampton

National capability	21.491
Research programmes	2.298
<i>Core capital</i>	<i>5.540</i>

Proudman Oceanographic Laboratory

National capability	3.767
Research programmes	1.071
<i>Core capital</i>	<i>1.063</i>

Other Infrastructure

Swindon office	7.414
Shared Services Centre costs	10.816
<i>Shared Services Centre capital costs</i>	<i>2.053</i>
<i>RSS Discovery replacement ship</i>	<i>2.000</i>
<i>Corporate capital</i>	<i>1.000</i>

Restructuring	2.446
---------------	-------

Private Funding Initiative scored outside DEL	-1.199
Provisions	-5.522
Cost of capital	10.698
Depreciation	21.935
Amortisation	0.605
<i>Asset disposals</i>	<i>-1.688</i>

TOTAL NERC EXPENDITURE **439.223**

Comprises:

Resource **	400.015
Capital	39.208

Capital expenditure in italics

* This table shows how NERC has spent the BIS science allocation. All figures are net of other income received.

** Resource figure differs from the net expenditure for the year by £22.903m, which is broken down as follows:

	£m
<i>Funding received from other bodies (recorded as financing)</i>	<i>10.907</i>
<i>AME impairments</i>	<i>12.558</i>
<i>Asset disposals (recorded under capital)</i>	<i>-0.752</i>
<i>Change in discount factor</i>	<i>0.190</i>

22.903

SCIENCE BUDGET EXPENDITURE IN RESEARCH ORGANISATIONS

Expenditure £k	RESPONSIVE AWARDS				Research programme grants	Research programme students	Research programme fellows	Research contracts	Total
	Grants	PhD students	Masters	Fellowships					
Aberystwyth University	339	207				38			584
Bangor University	1104	284	110	99	352	79		15	2043
Birkbeck College	24								24
Bournemouth University	36							23	59
Brunel University	20								20
Cardiff University	712	372		16	164	20		23	1307
Cranfield University	29		39		38			55	161
Diamond Light Source	2								2
Durham University	1311	353		31	123	115	15	262	2210
Economic & Social Research Council								1242	1242
Edge Hill University					8				8
Edinburgh Napier University	27				71	11			109
Engineering & Physical Sciences Research Council								197	197
Federal University of Santa Maria					103				103
Food & Environment Research Agency – FERA					-6				-6
Forest Research								79	79
Glasgow Caledonian University		20			26				46
Global Canopy Foundation					77				77
H R Wallingford Ltd					37				37
Heriot-Watt University	5		60		7				72
Imperial College London	1650	796	716	296	4483	243		1543	9727
Institute for European Environmental Policy					1				1
Keele University	177	15							192
King's College London	110	51	144		715	18		39	1077
Kingston University	14								14
Lancaster University	1328	226	104	74	551	96		219	2598
Liverpool John Moores University	2	38							40
London School of Hygiene and Tropical Medicine					19				19
London School of Economics & Political Science					9				9
Loughborough University	191	4			4	15			214
Macaulay Land Use Research Institute					77				77
Manchester Metropolitan University	54	20				16			90
Marine Biological Association	124							1027	1151
Medical Research Council								18	18
Meteorological Office								3065	3065
National Oceanography Centre	472	179		92	294	23		3790	4850
Natural History Museum	609			26	68			115	818
NERC British Antarctic Survey	923	203		44	375			957	2502
NERC British Geological Survey	363	70		87	133			1882	2535
NERC Centre for Ecology & Hydrology	487	533		102	1098	22		1242	3484
Newcastle University	1499	351	207	14	256	109		54	2490
Northumbria University	41			46					87
Open University	843	134		254	207	16		205	1659
Oxford Brookes University		22	34						56
Plymouth Marine Laboratory	117	260			259			5310	5946
Policy Studies Institute					205				205
Proudman Oceanographic Laboratory	193	74			55	5		455	782
Queen Mary, University of London	323	319	40		43	43		3	771
Queen's University of Belfast	109							3	112
Roehampton University		7				17			24
Rothamsted Research					1				1
Royal Botanic Gardens Kew	94								94
Royal Holloway, Univ of London	652	195	236	169	95	100			1447
Royal Veterinary College	48								48
Scottish Agricultural College					2				2

Expenditure £k	RESPONSIVE AWARDS				Research programme grants	Research programme students	Research programme fellows	Research contracts	Total
	Grants	PhD students	Masters	Fellowships					
Scottish Association for Marine Science	470	56			178	32		2812	3548
Scottish Universities Environmental Research and Reactor Centre	223	41			9	15		2091	2379
Sir Alistair Hardy Foundation for Ocean Science								399	399
Science and Technology Facilities Council – Laboratories	31				54			6718	6803
Swansea University	574	215		12	272				1073
Technology Strategy Board								528	528
University College London	1329	670	63	309	231	119		114	2835
University of Aberdeen	1573	373	106	122	443	133		46	2796
University of Bath	166	35							201
University of Birmingham	1236	498	210	16	332	91		353	2736
University of Bradford	53	29	93						175
University of Brighton	76								76
University of Bristol	3361	1027		724	612	158		1391	7273
University of Cambridge	1964	1184	27	298	252	92		96	3913
University of Cumbria						24			24
University of Dundee		10			74			362	446
University of East Anglia	2010	904	164	178	868	158	64	2857	7203
University of Edinburgh	2939	1115	92	596	335	126		1101	6304
University of Essex	553	195			126				874
University of Exeter	1297	390	66	373	120	121	12	84	2463
University of Glamorgan					1				1
University of Glasgow	655	231		283	207	59		20	1455
University of Hertfordshire	62	15			95				172
University of Hull	7	127		217		15			366
University of Kent		19				44			63
University of Leeds	4456	1079	354	214	478	280		7097	13958
University of Leicester	798	253	57		215	104		331	1758
University of Lincoln	10								10
University of Liverpool	1644	626		101	685	62		581	3699
University of Manchester	2524	860	38	191	486	118		292	4509
University of Nottingham	356	77	37		111	68		122	771
University of Oxford	2931	1200	55	564	1026	63		717	6556
University of Plymouth	623	151	30		125	35			964
University of Portsmouth	69			58	79				206
University of Reading	1820	1226	354	255	1372	28		6107	11162
University of Salford	82	23						86	191
University of Sheffield	1854	718	2	277	184	26		300	3361
University of Southampton	1301	656		194	470	133		77	2831
University of St Andrews	1199	382	-10	130	315	11		1272	3299
University of Stirling	147	113	51		124	15			450
University of Strathclyde	162	53		114	107				436
University of Surrey		20			63				83
University of Sussex	427	30							457
University of Teesside					3				3
University of the West of England					29				29
University of the West of Scotland					28			5	33
University of Ulster	133								133
University of Warwick	840	181		99	77				1197
University of Westminster								43	43
University of Wolverhampton								7	7
University of York	1130	413	121		477	83		454	2678
Zoological Society London Institute of Zoology	260	144		-6	87				485
TOTAL	55377	20072	3600	6669	20700	3199	91	58286	167994

GRANTS AWARDED IN 2009-10

	RESEARCH GRANTS							
	RESPONSIVE							
	Small grants		Standard grants		Antarctic Funding Initiative		Consortium grants	
Number	Value £k	Number	Value £k	Number	Value £k	Number	Value £k	
Aberystwyth University			1	251				
Bangor University			2	936				
Bournemouth University	1	78	1	317				
Brunel University			1	181				
Cardiff University			1	311				
Cranfield University	1	34						
Durham University	1	54	4	955				
Edinburgh Napier University								
Heriot-Watt University								
Imperial College London			5	1114			2	523
Keele University								
King's College London	1	57						
Lancaster University	1	41	2	283				
Liverpool John Moores University								
London School of Economics and Political Science								
Loughborough University	1	55	2	590				
Manchester Metropolitan University			1	19				
National Museums of Scotland	1	20						
National Oceanography Centre	2	113	2	741			1	102
NERC British Antarctic Survey			6	1886	4	3125		
NERC British Geological Survey	1	24	2	111				
Natural History Museum	3	253	3	556				
NERC Centre for Ecology & Hydrology			4	743				
Newcastle University	1	45						
Northumbria University	1	92	1	80				
Open University	3	123	3	434				
Oxford Brookes University								
Plymouth Marine Laboratory			1	99			1	141
Proudman Oceanographic Laboratory								
Queen Mary, University of London	1	47	1	193				
Queen's University of Belfast			1	249				
Rothamsted Research								
Royal Botanic Gardens Edinburgh								
Royal Botanic Gardens Kew			1	186				
Royal Holloway, University of London	1	63						
Scottish Agricultural College								
Scottish Association for Marine Science	2	113	3	784				
Scottish Universities Environmental Research and Reactor Centre	1	28	2	73				
Science and Technology Facilities Council – Laboratories								
Swansea University	3	141	1	125	1	147		
UK Astronomy Technology Centre								
University College London			9	3547				
University of Aberdeen	3	106	5	1386				
University of Abertay Dundee	1	49	1	14				
University of Bath			1	376				
University of Birmingham			7	1952				
University of Bradford								
University of Brighton			1	296				
University of Bristol	4	221	9	3112				
University of Cambridge	4	133	7	1392			1	107
University of East Anglia	3	162	11	2043	1	80	1	187
University of Edinburgh	2	78	10	2065	1	662	1	228
University of Essex	1	50	2	796				
University of Exeter			13	4090				
University of Glasgow	3	192	1	383				
University of Hertfordshire								
University of Hull	1	68			1	19		
University of Leeds	3	181	9	2194	1	208	1	909
University of Leicester	1	55	2	515				
University of Liverpool	4	243	5	1915				
University of Manchester			4	1492			1	123
University of Nottingham	1	47	2	260				
University of Oxford	3	146	9	3103			2	1711
University of Plymouth	1	110	2	101			1	151
University of Reading	3	128	4	1147			1	296
University of Salford								
University of Sheffield	2	48	5	1552				
University of Southampton	4	142	3	1048			1	370
University of St Andrews	4	171	4	893	1	65		
University of Stirling	1	58						
University of Strathclyde								
University of Surrey								
University of Sussex							1	433
University of Teesside								
University of Ulster			1	297				
University of Warwick			4	1067				
University of York			4	671				
Zoological Society of London								
TOTAL	75	3769	186	48924	10	4306	15	5281

RESEARCH GRANTS				RESEARCH FELLOWS		RESEARCH STUDENTSHIPS		MASTERS	
RESEARCH PROGRAMMES		KNOWLEDGE EXCHANGE							
Number	Value £k	Number	Value £k	Post-doc fellow Number	Advanced fellow Number	Doctoral training grants Number	Value £k	Masters training grants Number	Value £k
1	80	1	22			2	140	2	235
						3	348		
1	26					2	140	1	126
2	523			1		4	417		
2	268							2	157
1	157				1	8	930	5	839
2	113					1	70		
8	19240					1	77	2	304
3	1036					2	207	2	261
2	416					1	70		
2	253					2	100		
2	177					1	68		
1	317	3	25	1					
3	212					1	208		
4	264					1	70		
1	188								
9	1849	2	345			1	519		
2	250	1	10			3	278	5	588
2	252			1		1	140		
1	93							1	88
1	225			1		2	351		
						1	140		
3	792					2	282	1	91
		1	260						
						2	154	3	507
1	69								
1	37					2	139		
1	90								
5	629	1	429						
1	45	1	78			2	351		
1	19								
2	48					6	771	2	208
2	152			1		3	487	2	240
						1	70		
3	880					5	555	3	492
1	40							2	201
2	439	1	4	5		7	1052		
4	209	1	14	2	2	1	1003	1	74
4	224					4	1049	3	368
11	1669	1	3	3		4	1118	1	209
						1	140		
3	425			1		3	348	1	141
1	282			2		2	210		
2	247								
1	75					2	137		
7	1138					10	1463	7	795
4	212					4	488	1	123
2	196					5	811		
5	997					3	839	1	81
2	88					1	70	1	75
5	543	3	310	2		8	1126	1	121
		1	408			1	70	1	78
9	1719	1	8			6	985	6	727
2	167								
1	65	2	152	1		4	842		
6	642			1		2	771		
2	306			1		3	281	1	100
						1	70	1	105
1	26								
1	373								
1	134								
1	10								
2	107					1	210		
2	395					3	279	2	314
						1	77		
152	39428	20	2068	23	6	137	20521	61	7648

Management commentary

Statutory basis

NERC's statutory financial statements have been prepared using accruals accounting in accordance with the UK Government's Financial Reporting Manual (FRM) for 2009-10 and the accounts direction issued by the Department for Business, Innovation and Skills (BIS).

Despite absorbing £3.1m of in-year Grant-in-Aid savings during Financial Year 2010-11 directed by the Emergency Budget on 22 June 2010, it is expected that all liabilities falling due in this year will be met by NERC's Grant-in-Aid budget approved by Parliament. Furthermore, whilst there is potential for more significant savings to be made in future years as a result of the Government's Comprehensive Spending Review, it remains appropriate for these financial statements to be prepared on a going concern basis.

NERC maintains a risk management strategy that conforms to HM Treasury guidance. NERC's approach to risk is described comprehensively in the Accounting Officer's Statement on Internal Control within the Annual Accounts and is supported by the positive and reasonable assurance provided by the Research Councils Internal Audit Service.

Financial summary

NERC concludes the accounting period with a balanced financial position of outturn within 2% of estimate. A comparison with the previous accounting period is shown in Table 1. Reconciliation between NERC's outturn with its annual accounts for 2009-10 is shown in Table 2.

Statutory disclosures

In accordance with the Companies Act 2006, the following statutory disclosures are presented for the accounting period 2009-10:

NERC outturn	2009-10		2008-09	
	2009-10	2008-09	2009-10	2008-09
	£000	£000	£000	£000
Science budget	449,234	416,046		
Financing	10,907	6,546		
Earned income	60,601	52,683		
Total funding	520,742	475,275		
Expenditure	510,731	476,461		
Surplus/(Deficit)	10,011	(1,186)		
Variance %	1.9	(0.2)		

Pensions

NERC's pension liability is discussed in greater detail at Note 5 to the Annual Accounts.

Significant interests

Potentially relevant significant interests of NERC's Council members where they are affiliated to other organisations are presented at Table 2 in the Remuneration Report to the main accounts. No issues regarding conflict with their managerial responsibilities have materialised. NERC's Council Secretariat manages a Register of Interests: www.nerc.ac.uk/about/work/boards/councils/interests.asp

Auditors

NERC's accounts are audited by the Comptroller and Auditor General who has had access to all relevant information. No remuneration has been paid to NERC's auditors for non-audit work. So far as the Accounting Officer is aware, our auditors are aware of all relevant audit information. The Accounting Officer has done all he should to make himself aware of any relevant audit information and to establish that NERC's auditors are aware of that information.

Sickness absence

NERC's sickness absence rate was 3.2% (2008-09: 3.0%), equivalent to 6.1 days per full time employee.

Public Sector Information

NERC has complied with the cost allocation and charging requirements set out in HM Treasury and Public Sector Information guidance, but is exempt from the requirements of The Re-use of Public Sector Regulations 2005.

Payment policy

NERC observes the Confederation of British Industry Code of Practice regarding prompt payment, and in accordance with Government direction, has committed to paying its suppliers within 10 working days of the receipt of a valid invoice. During 2009-10, 49% of payments were made within 10 working days and 92% within 30 working days (2008-09: 84%). In accordance with the guidance of the Statutory Instrument 1197/571, creditor days for the period are 19 days (2008-09: 22 days). Payment policy performance under Shared Services Centre arrangements will be reviewed during 2010-11.

NERC outturn and annual accounts reconciliation 2009-10

Table 2

	Resource £000	Capital £000	Total £000
Net expenditure ¹	422,918	-	422,918
Less AME impairments ²	(12,558)	-	(12,558)
Funding from other bodies ³	(10,907)	-	(10,907)
Capital grants	(18,524)	18,524	-
Capital ⁴	-	40,896	40,896
Profit on disposal of fixed assets ¹	752	(752)	-
Net profit on NBV and revaluation reserve disposals ⁵	-	(936)	(936)
Change in discount factor ¹	(190)	-	(190)
Outturn	381,491	57,732	439,223
Science budget	381,037	68,197	449,234
Reported (deficit)/surplus^{6,7}	(454)	10,465	10,011

Notes:

- Taken from the operating cost statement for the year ended 31 March 2010.
- AME impairments are those impairments that fall outside the scope of Departmental Expenditure Limits. They relate to the first professional valuations for NERC buildings in Keyworth and Wallingford (see Note 10(a) (iv)).
- Taken from Note 3 Financing.
- Taken from Note 10(a) Property, plant and equipment and Note 11 Intangible assets – additions.
- In accordance with Financial Reporting Manual.
- Resource surplus comprises £786k near-cash deficit and £332k non-cash surplus.
- Capital surplus comprises £2,971k capital grants deficit and £13,436k direct capital surplus.

Developments during the year

Living With Environmental Change (LWEC)

NERC continues to take a leading role in the ten-year, multi-partner LWEC programme. This programme aims to provide the information needed to manage and protect vital ecosystem services effectively, on the same scales of time and space over which the economy is managed. It also aims to strengthen the evidence base for policy, not least by addressing the uncertainties that remain about the impacts of climate change and the links between natural capital and human well-being. It communicates with all stakeholders and works to enhance people's skills and knowledge so that they can better comprehend change and the uncertainties associated with it. This helps people in all walks of life make better decisions and life choices and increase opportunities for the development of individuals and the wider economy. By 1 April 2010, 40 programmes had been launched under LWEC, 19 of which NERC was involved in. NERC has committed £237m to the programme.

NERC is leading on knowledge exchange, and has developed a Business Advisory Board (alongside the Technology Strategy Board) to ensure links with industry are developed as fully as possible. The Board consists of senior business leaders from a wide range of sectors including water, financial services, food and agriculture, construction and environmental monitoring.

Replacement of RRS *Discovery*

NERC has successfully commissioned the building of a replacement ship for the ageing RRS *Discovery*, which is essential for improving our ability to understand and predict the Earth's environment, and for continuing to underpin the UK's approach to Earth system science. The new ship's design will allow it to work in rougher seas, complementing the work of NERC's other research vessel, the RRS *James Cook*. The contract was awarded to Spanish shipyard CNP Freire, SA, in March 2010, and the ship should be ready to begin scientific work by 2013/14. The total project cost of bringing the new vessel into service is £75m.

Carbon capture and storage

The British Geological Survey (BGS), a NERC-funded research centre, has established a programme to investigate the potential for storing CO₂ in geological formations for the purposes of carbon capture and storage (CCS). BGS has been providing expert technical advice to policy-makers in the UK and Europe who are responsible for regulating the deployment of CCS. The technology is a potential way for the UK and the world to maintain electricity supplies and economic growth without further changing the atmosphere and the climate, and in the long term it could turn into a profitable sector for the UK.

Operational Efficiency Programme (formerly Value for Money)

The Operational Efficiency Programme (OEP) was launched by the Chief Secretary to the Treasury in July 2008 and draws on private-sector expertise to identify public sector efficiency savings from back-office operations, procurement, asset management, property, and local incentives and empowerment. It builds on the SR04 Efficiency Programme and the CSR07 Value for Money programme. NERC is continuing to implement the operational efficiency savings plan enacted at the beginning of the CSR07 period. NERC met its share of the RCUK targets in 2009-10. In 2010-11, NERC will report on revised savings targets made in response to the HM Treasury OEP savings plan.

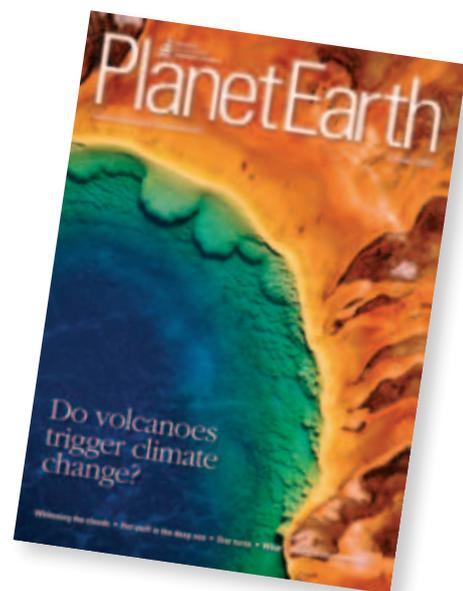
The National Oceanography Centre

This year has seen the building of better working systems across the NERC community, through the merger of the Proudman Oceanographic Laboratory (POL) and the NERC-managed National Oceanography Centre, Southampton (NOCS) into a single institution, the National Oceanography Centre (NOC). NOC will have a key role in providing the capability to meet the needs of the whole UK marine research community and will work in close partnership with the wider marine science community to enable the integrated research needed to tackle the big environmental issues facing the world. Research priorities will include the oceans' role in climate change, sea-level change and the future of the Arctic Ocean.

Communications

NERC Council this year approved a new Public Engagement with Research Strategy that encompasses much of our communication activity. As well as recognising the need to encourage and train NERC researchers to engage with the public, its main purpose is to guide the way we increase public awareness of NERC-funded research and the benefits that flow from it. One example of recent efforts to broaden our audience is our sponsorship of a 'Lates' event at the Science Museum in London. Aimed at a young adult audience, this featured a host of interactive exhibits, demonstrations and debates on geoengineering.

To continue to make our science more accessible, we have further developed our Planet Earth Online website, improving the style and content of our podcasts and reaching new audiences by using social media sites like Facebook and Twitter to promote the website's content. A new e-magazine format was introduced for the Spring 2010 edition of *Planet Earth*, which makes reading the magazine a more dynamic and interactive experience for its online audience. Meanwhile the publication's traditional hard-copy circulation continues to grow. For those with closer links to environmental science, we have organised discussion events on topics ranging from environmental nanoscience to the contribution of research to the issues debated at the COP15 Climate Change Conference in Copenhagen.



Management commentary

Science into policy

NERC-funded research has helped inform national and international policy through a number of important activities this year. For example, NERC scientists provided evidence to the UN Climate Change Conference in Copenhagen. NERC also responded to numerous UK Parliament select committee inquiries on policy areas including the regulation of geoengineering, UK food security, air quality and the impact of spending cuts on science and scientific research.

To go further in promoting the translation of environmental science into public policy, NERC has appointed three policy placement fellows this year, at the Environment Agency, the Department of Energy and Climate Change (DECC) and within the LWEC programme. NERC has also funded two workshadow placements this year at the Air Quality Group of Defra and the Greater London Authority (GLA), see p25.

NERC also published a revised edition of

Science into Policy: Taking part in the process in May 2009. This has been sent to all NERC grant-holders and key stakeholders, providing guidance on bridging the gap between science and policy, and facilitating the uptake of NERC science into environmental policy-making.

 We have come to recognise how integrated modelling of the type delivered by the Tyndall Centre Cities programme can help to bring different stakeholders together to develop common understanding of processes and consequences of long-term change.

Alex Nickson, GLA Strategy Manager for Climate Change Adaptation and Water



Environmental Nanoscience Initiative

NERC has completed a funding call for the Environmental Nanoscience Initiative in collaboration with Engineering and Physical Sciences Research Council (EPSRC), Environment Agency (EA), Department for Environment, Food and Rural Affairs (Defra), and the US Environmental Protection Agency. NERC has invested £2m in the initiative for 2009-10, leading to £3.5m of co-funding from the partners. The Environmental Nanoscience Initiative will begin to answer some questions of basic nanoscience research, shedding light on areas such as the fate and behaviour, ecotoxicology and ecological effects of nanoparticles.

Solar Terrestrial Physics

NERC has taken over responsibility from the Science and Technology Facilities Council (STFC) for funding Earth-oriented solar terrestrial physics research – the study of the Earth's upper atmosphere and its interaction with the sun – and key associated ground-based instruments. This will include support for the UK membership of the European Incoherent Scatter (EISCAT) Scientific Association and the Earth-oriented solar terrestrial physics component of the UK Solar System Data Centre (UKSSDC). The parts of solar terrestrial physics research which are most relevant to NERC's mission are those whose primary goal is to understand the Earth's environment from the deep interior to the upper atmosphere (that is, the mesosphere, thermosphere and ionosphere).

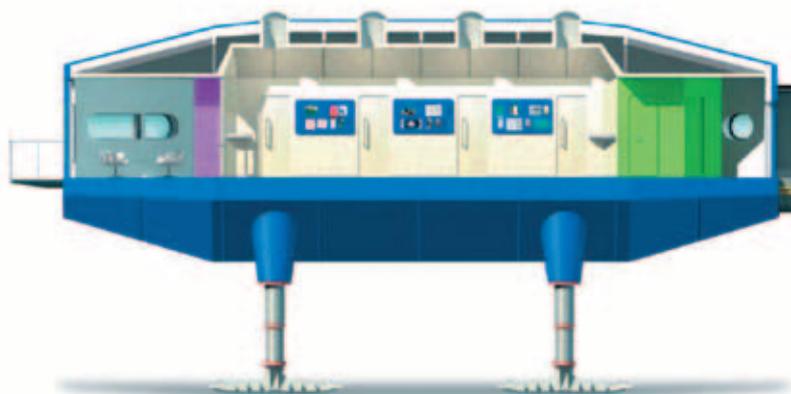
NERC Strategy review

During the last financial year NERC has undertaken its first annual cycle of refreshing its dynamic strategy. Council ratified the outcomes of this process in February/March 2010. The purpose of the review is to establish progress in delivery and determine any changes to the strategy that are required to address changing needs, so that NERC is positioned to deliver current and developing priorities.

Green Economy

NERC is working to strengthen its engagement with business by developing a Green Economy strategy and commissioning market analysis to explore what key business sectors need from environmental science. NERC research will enable these sectors to adapt to environmental change and respond to a low-carbon economy. A programme of interviews, workshops and other activities is now under way to bring NERC staff and researchers together with the business community.

Forward look



Arctic Research Programme

Alongside UK and international partners, NERC will support research to improve our ability to predict changes in the Arctic, particularly over the next 50-100 years, including regional impacts and the potential for feedbacks on the global Earth system. The climate is undergoing greater-than-average changes in the Arctic, and this is expected to continue. It is a critical region for global environmental change, and one in which the UK has significant strategic interests. Understanding the drivers and feedback of rapid climate change in the Arctic, and predicting their scale and rate over timescales from months to centuries, is an urgent scientific challenge with great importance to societies worldwide. NERC is investing £15m in a five-year Arctic Research Programme over the period 2010-15.

Public dialogue on geoengineering

NERC is working in partnership with Sciencewise-ERC (Expert Resource Centre), which supports public dialogue activities in government. Through a series of workshops with members of the public, NERC is exploring people's attitudes towards various potential geoengineering methods to help shape research priorities. These workshops will be supported by public debates and events around the UK. NERC also aims to work with funding partners and research providers to ensure that public engagement with research activity, including public dialogue where appropriate, is fully embedded in the development and delivery of all major strategic research programmes.

Carbon Reduction Commitment (CRC) Energy Efficiency Scheme

NERC is working towards meeting its commitment to the UK CRC Energy Efficiency Scheme, which aims to improve efficiency and reduce carbon emissions. Through this, NERC will contribute to fulfilling the British government's commitment to reducing UK carbon emissions by 60 per cent by 2050, relative to 1990 levels.

Halley VI research station

The 2009-10 Antarctic season saw great progress on the construction of the Halley VI research station (above), situated on the Brunt ice shelf on the mainland of Antarctica. The external cladding is all in place, and the handover of the new station is planned for early 2012. Studies at Halley will provide a crucial global perspective on ozone depletion, atmospheric pollution, sea-level rise and climate change.

Theme Action Plans

NERC has begun to implement the actions developed by its seven science theme leaders who, working with the community and other stakeholders, have identified the investments needed to meet NERC's strategy challenges and science priorities, building on research and other activities currently under way over the period 2009-14. NERC has committed £77m to its 2009 Theme Action Plan. Programmes include an Arctic Research Initiative, Biodiversity and Ecosystem Service Sustainability (BESS), Macronutrient Cycles, Ice Sheet Stability and Networks of Sensors – Demonstration High Resolution Networks.

International Strategy

NERC will continue to implement its International Action Plan. NERC will jointly lead, alongside the US National Science Foundation, the Belmont Forum, a new initiative which brings together international funding agencies and science councils, aligning their resources in order to accelerate the production of the knowledge about environmental change that society needs. NERC also plans to launch an International Opportunities Fund, which will provide funding to UK researchers for international collaborations that can help address its strategic priorities through partnerships that go beyond what the UK can do alone.

Shared Services Centre

The seven research councils have established a Shared Services Centre (SSC), to provide finance, grants, human resources, information systems, procurement and payroll operational services to each of the councils and their institutes. The councils have created the SSC with the aims of reducing spending on administration by sharing and standardising processes and of making savings through centralised procurement. The SSC Project was established in March 2006. By participating fully in the cross-council SSC, NERC is improving efficiency and saving money that can then be diverted into science. The SSC is already providing IT and telecommunications services to NERC, and it is planned that services in all its other business areas will be delivered to NERC during 2010.

Spending Review

NERC is preparing for the 2010 Spending Review. Although the details of the next Spending Review are not yet known, NERC is working with its fellow councils through Research Councils UK (RCUK) to develop a RCUK Spending Review framework. This framework will help develop individual Research Council inputs.

Information security

The Government's Security Policy Framework and the Data Handling Review require departments to submit an annual report to Cabinet Office. NERC has put in place policies and procedures to minimise the risk of data loss and reports annually on information security, particularly in relation to personal information. The number of personal data loss incidents is recorded, and in 2009-10 there were no such incidents.

Professor Alan J Thorpe

Chief Executive and Accounting Officer

11 October 2010

ACCOUNTS 2009-10

Remuneration Report

Remuneration policy

The Remuneration Committee is responsible for agreeing the pay and allowances of senior managers, i.e. directors (except for the Chief Executive, see below). The Committee members are listed below:-

Mr E Wallis, Chairman NERC
Mr P Hazell, Council Member
Professor A Halliday, Council Member
Professor A Thorpe, Chief Executive
Mrs J Timberlake, Director, People Skills and Communication who attends in an Advisory capacity only

The Remuneration Committee works in accordance with its policy on senior staff pay, which is designed to reward senior staff on the basis of individual skills, experience and performance set against the market median for their role. A market-related pay point is determined by survey evidence obtained from relevant comparator organisations in the public, higher education and voluntary sectors and is updated annually.

In accordance with NERC's appraisal system, performance is assessed against pre-set objectives for individual roles with input in the assessment process from individual reviewees, reviewers and the Chief Executive.

From 1 April 2006 all pay movement for senior employees is performance related. Prior to that date only the non-consolidated element of senior pay was performance related.

It should be noted that no senior managers are on a service contract. No awards have been made to senior staff this year.

More information about the remuneration committee can be found at the following website: www.nerc.ac.uk/about/work/boards/intro/#remuneration

Employment Contracts

NERC staff are not civil servants but the organisation makes its appointments in accordance with the broad principles set out in the Civil Service Commissioners' Recruitment Code, which requires appointments to be on merit on the basis of fair and open competition but also includes the circumstances when appointments may otherwise be made.

All senior officers covered by this report, apart from the Chief Executive, hold appointments that are open-ended. Senior staff appointed before October 2006 may work until age 65, provided their performance remains satisfactory and there is a continuing need for them; they may also request retention beyond

age 65, although there is no entitlement to this. Senior staff appointed after October 2006 have a contractual retirement age of 65, although they may also seek retention beyond that age. All staff may retire after age 50 and draw their pensions on an actuarially reduced basis. Staff appointed before October 2006 may draw full pensions from age 60. Staff who leave during a formal redundancy exercise will be eligible for compulsory early retirement/severance terms, as defined under the rules of the Research Council's Superannuation Scheme. These payments are in line with those due under the Civil Service Compensation Scheme.

The notice period for all senior employees is three months.

Remuneration of the Chief Executive

Professor Thorpe started his tenure on 1 April 2005. His initial contract was for a period of four years. In April 2009 it was extended for a further four years. Both the appointment terms and remuneration package are determined by the Department for Business, Innovation & Skills (BIS).

The emoluments of the Chief Executive, including both taxable and non-taxable benefits, were £191,627 (2009: £126,838). This included:

- From 1 April 2009 a basic salary of £121,562 (2009: £119,765) and a market supplement of £20,000 (2009: nil)
- From 1 October 2009 a non-consolidated allowance of £20,300 p.a. pro rata for the RCUK Executive Group Chair (2009: nil)
- 2008/09 performance pay non-consolidated awards:
 - Annual performance bonus of £4,791 (2009: £7,073)
 - RCUK performance bonus of £3,593 (2009: nil)
 - Appointment term bonus of £9,581 (2009: nil)
- Appointment term bonus reserve relating to the original contract (2005-2009) of £21,950 (2009: nil)

A charge of £30,153 (2009: £25,510) was also incurred in respect of employer's pension contributions. This was assessed as 21.3% of basic salary (2009: 21.3%). The Cash Equivalent Transfer Value for the Chief Executive at the 31 March 2010 was £1,474,219. The real increase in the cash equivalent transfer value for the period was £240,158. The Chief Executive is an ordinary member of the Research Councils' Pension Scheme.

Audited Information

Remuneration of senior employees

Other members of the council's senior management team received emoluments during the year, including taxable benefits as below, these individuals are all ordinary members of the Research Councils' Pension Scheme.

Table 1: Remuneration of Senior Employees (2009-10)

Name	Notes	Total ⁴ emoluments 2009-10 £000	Total emoluments 2008-09 £000	Pension increase in real terms £000	Accrued pension at 31/03/10 £000	Lump ⁵ sum at 31/03/10 £000	Cash ⁶ equivalent transfer value as at 1/04/09 £000	Cash ⁷ equivalent transfer value as at 31/03/10 £000	Cash equiv. transfer value increase in real terms £000
Professor A Thorpe	1	190 - 195	125 - 130	10 - 12.5	5 - 10	-	1,107	1,474	240
Professor P Nuttall		105 - 110	105 - 110	5 - 7.5	30 - 35	145	877	1,132	156
Professor A Willmott		85 - 90	80 - 85	5 - 7.5	0 - 5	-	555	723	98
Professor A E Hill	2	105 - 110	95 - 100	0 - 2.5	10 - 15	100	541	647	25
Mr D Bloomer		100 - 105	95 - 100	2.5 - 5	5 - 10	-	141	200	38
Mrs J Timberlake	3	75 - 80	75 - 80	0 - 2.5	5 - 10	-	84	98	1
Dr S Wilson		90 - 95	85 - 90	2.5 - 5	10 - 15	57	190	265	39
Professor J Ludden		105 - 110	100 - 105	0 - 2.5	0 - 5	-	79	133	42
Professor N Owens		100 - 105	90 - 95	5 - 7.5	10 - 15	123	714	954	152
Dr P Newton		80 - 85	75 - 80	2.5 - 5	10 - 15	-	156	216	36

Notes:

1. Professor Thorpe's total emoluments includes £31,531 being his appointment term bonus including the reserve accrued over his original contract period of 2005-2009 and an allowance of £10,150 for taking the role of RCUK Executive Group Chair from 1 October 2009.
2. Professor Hill was on secondment to the University of Southampton who determine and pay his salary. His costs are therefore shown in note 8 other operating costs rather than staff costs.
3. Mrs Timberlake has been working as 0.8 full time equivalent from 1 April 2008.
4. The average annual earnings increase for senior employees (excluding Chief Executive) was 5.4%.
5. Lump sums available for members of the RCPS Classic Scheme only.
6. Cash Equivalent Transfer as at 01/04/09 or date of starting if later. These figures are different from closing figures published last year. This is due to the CETV factors being updated to comply with the Occupational Pension Schemes (Transfer Values) (Amendments) Regulations 2008.
7. Cash Equivalent Transfer as at 31/03/10 or date of leaving if earlier.

Total Emoluments

Total emoluments include gross salaries and performance related bonuses. From 1 April 2004 basic pay rates for senior staff incorporate all existing allowances including a supervisory and responsibility allowance and any contribution awards.

Pension benefits

All senior employees are ordinary members of the Research Councils' Pension Scheme (RCPS) which is a defined benefit scheme funded from annual grant-in-aid on a pay-as-you-go basis.

Further details about the RCPS can be found in Note 5(d) of the Annual Accounts.

The Cash Equivalent Transfer Value (CETV)

A Cash Equivalent Transfer Value (CETV) is the actuarially assessed capitalised value of the pension scheme benefits accrued by a member

at a particular point in time. The benefits valued are the member's accrued benefits and any contingent spouse's pension payable from the scheme. A CETV is a payment made by a pension scheme or arrangement when the member leaves a scheme and chooses to transfer the benefits accrued in their former scheme. The pension figures shown relate to the benefits that the individual has accrued as a consequence of their total membership of the pension scheme, not just their service in a senior capacity to which disclosure applies. The CETV figures include the value of any pension benefit in another scheme or arrangement which the individual has transferred to the Research Councils' pension arrangements and for which the Civil Service (CS) Vote has received a transfer payment commensurate with the additional pension liabilities being assumed. They also include any additional pension benefit accrued to the member as a result of their purchasing additional years of pension service in the scheme at their own cost.

The real increase in the value of the CETV

This reflects the increase in CETV effectively funded by the employer. It takes account of the increase in accrued pension due to inflation, contributions paid by the employee (including the value of any benefits transferred from another pension scheme or arrangement) and uses common market valuation factors for the start and end of the period.

Remuneration of Council Members

Members of Council receive an Honorarium of £6,580 per annum to cover all work for the Council including membership of Council's Boards. The Chairman of Council, Mr Wallis, receives a salary of £16,430 per annum. These

rates are effective from 1 October 2009 and are formulated by the Department for Business, Innovation and Skills.

Council members are normally employed on fixed term contracts not exceeding 4 years.

Honoraria are not payable to members who are:

- Civil Servants
- Employees of NERC
- Full time employees of organisations whose funds are derived from Votes of Parliament (eg Government Departments, UK Atomic Energy Authority, British Broadcasting Corporation and other Research Councils)

Members of Council may not receive fees in addition to honoraria. University academic staff and retired Civil Servants are eligible to receive honoraria or fees.

Table 2: Membership of the NERC Council (2009-10)³

Name	Affiliation	Period of Appointment	Total Emoluments £'000		Notes
			2009-10	2008-09	
Mr E Wallis	Chairman	01 Jan 2007 - 31 Dec 2010	15 - 20	15 - 20	
Professor A Thorpe	Chief Executive and Deputy Chairman	01 Apr 2005 - 31 Mar 2013	0	0	1
Professor H Davies	Institute of Atmospheric & Climate Science, ETH Zürich	01 Aug 2005 - 31 Jul 2011	5 - 10	5 - 10	
Professor A Fitter	Department of Biology, University of York	01 Aug 2005 - 31 Jul 2011	5 - 10	5 - 10	
Professor A Glover	Chief Scientific Advisor for Scotland	01 Aug 2007 - 31 Jul 2010	0	0	1
Professor A Halliday	Department of Earth Sciences, University of Oxford	22 Nov 2004 - 31 Jul 2011	5 - 10	5 - 10	
Mr P Hazell	Chairman of the Argent Group, Non-executive Director of UK Coal Plc, BRIT Insurance Holdings Plc, and Smith & Williamson, Member of the Competition Commission and Chair of NERC Council Audit Committee	22 Nov 2004 - 31 Jul 2011	5 - 10	5 - 10	
Mrs S Parkin	Programme Director at Forum for the Future	01 Aug 2006 - 31 Jul 2009	0 - 5	5 - 10	2
Professor P Curran	Vice Chancellor and Professor of Physical Geography, Bournemouth University	08 Aug 2006 - 31 Jul 2010	5 - 10	5 - 10	
Professor J Mitchell	Chief Scientist, Met Office	10 Oct 2006 - 30 April 2009	0	0	1, 2
Professor M Lockwood	Professor of Space Environment Physics, Department of Meteorology, University of Reading.	01 Mar 2007 - 31 Jul 2010	5 - 10	5 - 10	
Professor M Wilson	Professor at the Institute of Geophysics, School of Earth and Environment, Pro-Dean for Research in the Faculty of Environment, University of Leeds	01 Mar 2007 - 31 Jul 2010	5 - 10	5 - 10	
Professor T Meagher	Professor and Chair of Plant Biology at the University of St Andrews	01 Aug 2007 - 31 Jul 2010	5 - 10	5 - 10	
Professor R Watson	Chief Scientific Advisor to DEFRA	01 Dec 2007 - 30 Nov 2011	0	0	1
Mr R Douglas	Managing Director, Willis analytics for Willis Re	01 Aug 2008 - 31-Jul-2012	5 - 10	0 - 5	
Professor C Godfray	Professor of Zoology, University of Oxford	01 Aug 2008 - 31-Jul-2012	5 - 10	0 - 5	
Professor A Watson	Professor at the School of Environmental Sciences, University of East Anglia	01 Aug 2008 - 31-Jul-2012	5 - 10	0 - 5	
Professor J Slings OBE	Chief Scientist, Met Office	01 May 2009 - 30 April 2013	0	0	1

Notes:

1. Honoraria are not payable to members who are civil servants, employees of NERC or full time employees of organisations whose funds are derived from Votes of Parliament.
2. Professor Mitchell left on 30 April 2009. Mrs Parkin left on 31 July 2009.
3. Paul Williams attends Council as a BIS observer and is not remunerated for his services.

Professor Alan J Thorpe

Chief Executive and Accounting Officer

11 October 2010

Natural Environment Research Council Accounts 2009-10

Statement of Chief Executive's responsibilities with respect to the Financial Statements

Under Paragraph 3 of Schedule 1 to the Science and Technology Act 1965, the Secretary of State for the Department for Business, Innovation and Skills has directed the Council to prepare for each financial year a statement of accounts in the form and on the basis set out in the Accounts Direction. The accounts are prepared on an accruals basis and must give a true and fair view of the state of affairs of the Natural Environment Research Council and of its income and expenditure, recognised gains and losses and cash flows for the financial year.

In preparing the accounts the Chief Executive as the Accounting Officer is required to comply with the requirements of the *Government Financial Reporting Manual* and in particular to:

- observe the Accounts Direction issued by the Department for Business, Innovation and Skills, including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis;
- make judgements and estimates on a reasonable basis;
- state whether applicable accounting standards as set out in the Government Financial Reporting Manual (www.hm-treasury.gov.uk/frem_index.htm) have been followed, and disclose and explain any material departures in the financial statements; and
- prepare the financial statements on the going concern basis.

The Department for Business, Innovation and Skills has appointed the Chief Executive as Accounting Officer of the Natural Environment Research Council. The responsibilities of an Accounting Officer, including responsibility for the propriety and regularity of the public finances for which the Accounting Officer is answerable, for keeping of proper records and for safeguarding the Natural Environment Research Council's assets, are set out in the Non-Departmental Public Bodies' Accounting Officers' Memorandum, issued by HM Treasury and published in 'Managing Public Money' (The Stationery Office).

The maintenance and integrity of NERC's website is the responsibility of the Accounting Officer; the work carried out by the auditors does not involve consideration of these matters and accordingly the auditors accept no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the website.

Statement of Internal Control

1. Scope of responsibility

As Accounting Officer, I have responsibility for maintaining a sound system of internal control that supports the achievement of the Natural Environment Research Council's policies, aims and objectives, whilst safeguarding the public funds and assets for which I am personally responsible, in accordance with the responsibilities assigned to me in Managing Public Money.

The powers, roles, responsibilities and membership of Council are defined in its Royal Charter. The nature of its relationship with its sponsor department, the Department for Business Innovation and Skills (BIS), is defined in the Management Statement and Financial Memorandum agreed with DIUS (a predecessor department of BIS) in 2005. These documents are available on the NERC website.

Council has established three bodies to support it in discharging its responsibilities:

- i. the Audit Committee;
- ii. the Science & Innovation Strategy Board (SISB); and
- iii. the NERC Investment Committee (NIC).

The responsibilities of the Chief Executive, who is also the Accounting Officer of the Council, are set out in the Management Statement and Financial Memorandum. I may delegate the administration of these responsibilities to Council's employees but may not assign any of the responsibilities absolutely to any other person. I have established the NERC Executive Board (NEB) to support me in discharging these responsibilities.

2. The purpose of the system of internal control

The system of internal control is designed to manage risk to a reasonable level rather than to eliminate all risk of failure to achieve policies, aims and objectives; it can therefore only provide reasonable and not absolute assurance of effectiveness. The system of internal control is based on an ongoing process designed to identify and prioritise the risks to the achievement of departmental policies, aims and objectives, to evaluate the likelihood of those risks being realised and the impact should they be realised, and to manage them efficiently, effectively and economically. The system of internal control has been in place in NERC for the year ended 31 March 2010 and up to the date of approval of the annual report and accounts, and accords with Treasury guidance.

3. Capacity to handle risk

Overall responsibility for risk management in NERC lies with the Chief Executive, who as

the NERC Accounting Officer signs this annual Statement on Internal Control as part of the audited Annual Accounts. Currently I delegate the task of implementing and maintaining the risk management policy and strategy to the Director Finance and Operations, who fulfils the role of Director Responsible for Risk. The Director Responsible for Risk's responsibilities include overseeing the activities of the Risk Management Network (see para 5) and reporting on risk management to NEB. NERC Directors have a responsibility to ensure the effective application of NERC's risk management strategy and policy. These arrangements ensure risk management is an integral part of NERC's management style and is tied to core activities reflected in the NERC Strategic Management Tool and BIS scorecard.

NEB is the owner of the NERC Risk Management Strategy and is responsible for reporting issues relating to risks and their management to Council, and for receiving assurance from NERC staff that risks are managed appropriately and passing this assurance to Council.

In executing these responsibilities the role of NEB can be characterised as follows:

- Monitor:
- i overseeing the process
 - ii noting business critical risks
 - iii noting mitigation strategies
 - iv reviewing audit output
 - v carrying out an annual review of risk and the risk management systems in place;
- Decide:
- i setting and communicating the NERC level risk appetite
- Direct:
- i setting delegated authority levels
 - ii solving risk management dilemmas (when asked to do so)

NEB will review specific, high risk, matters on a monthly basis together with issues relating to any risks that are referred upwards by Research Centre Directors and others via the agreed escalation procedures.

NEB encourages sound properly managed risk taking and recognises that effective risk management, rather than risk avoidance, is an essential ingredient for successful business operations.

NEB Directors appoint "owners" for all risk threats as they emerge. These risk owners are most likely to be middle / senior managers within NERC Swindon Office and the Research Centres. Risk owners have responsibility for the practical day to day management of risks and are responsible for ensuring that appropriate management plans are prepared and that risk

Statement of Internal Control

continued

response actions are carried out effectively. Responsibility for managing key business risks is retained at a senior level.

Risks are managed by trained and experienced people. All staff in NERC participate in an annual appraisal, where individual training needs and personal development requirements are identified and assessed. The Risk Management Network, supported by the Risk Management Co-ordinator, will be responsible for identifying specific risk management training needs and making proposals to management at appropriate levels about how such training should be provided. The Network will periodically review the delivery and take-up of such training and include a commentary in the annual report to NEB.

The NERC Risk Management Network, which currently meets twice each year, helps promote best practice in risk management across NERC by sharing lessons learnt and monitoring compliance with (and continued relevance of) the NERC Risk Management Strategy and Policy (which are available to all staff via the NERC extranet).

4. The risk and control framework

The purpose of the NERC Risk Management Strategy is to describe at a high level how NERC will implement its Risk Management Policy, setting out the necessary organisation, roles and responsibilities, along with the framework and underlying principles of the control system.

NERC Directors have a responsibility to ensure the effective application of NERC's risk management strategy and policy. Directors must satisfy themselves that the following issues have been adequately addressed within their areas of responsibility:

- the requirements of corporate governance – these include developing more focused and open ways of managing risk and ensuring that all NEB decisions on managing risk are implemented.
 - the need to identify appropriate 'risk owners' at a sufficiently senior level for all identified risks.
 - the adequacy of reporting arrangements that ensure the timely escalation of major risk issues internally within their area of responsibility; and, where appropriate externally to NEB. And that these arrangements are in line with delegated authority levels and the provisions of Research Centre Management Statements (where these apply).
- the need to ensure a shared understanding of risk management principles, thereby ensuring a consistent approach to the treatment of risks at all levels.
 - deciding the overall risk tolerance level, or "risk appetite" for areas that they have a responsibility for (mindful of the NERC level risk appetite determined by NEB).

NERC has a web-based database to host the NERC risk register. The system is known as STAR (System for Targets and Risks).

STAR is the cornerstone of NERC risk management and provides a single system for recording Business Risks, Business Critical Projects and activities reflected in the NERC Strategic Management Tool and BIS scorecard. In addition to attaching scores to risks and identifying mitigation tactics, STAR also records information concerning quarterly progress against plan by way of a "traffic light system". Reports from STAR are considered by Council (NERC Top Risks), NEB (NERC Top Risks / NERC Strategic Management Tool and BIS scorecard activities progress report) and the NERC Audit Committee (NERC Top Risks / Business Critical Projects status report). STAR also provides the quarterly report to BIS that details progress towards completing activities that feature in the BIS scorecard.

Funding Assurance Programme (FAP) / Transparent approach to costing (TRAC) QA programme work

Annual validation procedures are conducted on a Cross Council basis to oversee regularity of research expenditure at research organisations. This is achieved through a set of processes coordinated by RCUK in the form of the FFAP Quality Assurance and Validation of TRAC compliance, and the development of new TRAC compliance testing methodology.

The Research Councils Shared Services Centre Project

The seven Research Councils have agreed to establish a Shared Services Centre (SSC), to be based in Swindon. The SSC was incorporated in 2007 as RCUK Shared Services Centre Ltd. The RCUK Shared Services Centre implementation is a business critical project that is intended to deliver a single organisation administrative support service for all UK Research Councils. This includes main administrative activities in Human Resources; Payroll; Finance and Procurement; IT; and Grants processing. The key risks that NERC has to manage are around the development of the new shared service centre, the transition of data to the new system, and the day to day

Statement of Internal Control

continued

operations of the new system. NERC has the following key control and assurance areas:

- Governance and risk management of the implementation project is provided by the RCUK SSC Project Board on behalf of the Research Councils. An RCUK SSC Project Audit Committee comprising representatives from each Research Council's Audit Committee operates to provide oversight on risk management and control of the project. NERC has created a project board and team to oversee and ensure the smooth transfer of operations from NERC to the SSC. NERC fully expects to migrate transaction services to SSC during 2010-11.
- During 2009-10 considerable effort has been expended in establishing the security and controls framework now operating in the RCUK SSC. As part of this, NERC established an internal review to ensure that we understood the SSC systems and controls that would operate after transition.
- Internal audit assurance has been provided on the RCUK SSC Ltd business operations (supporting that company's annual Statement on Internal Control), the readiness of each Research Council to transfer to SSC live operations and independent assurance on project delivery.
- For the future, a comprehensive internal audit strategy relating to the RCUK SSC project and operations for 2010-11 and beyond has been developed. A feature of this strategy is that the control framework operating within the ERP platform and the interfaces with the respective Research Councils will be tested end to end after the implementation of the solution.
- Other project management assurance has been provided through external consultants, and the project is subject to OGC Gateway independent review.

There is a phased implementation plan for transferring the Councils' services and operations that commenced during 2008-09 with the transfer of some procurement and information technology services functions. NERC Finance transferred to the SSC with effect from 7 April 2010. Human Resources commenced a phased transfer from 22 April 2010 that is now complete. Payroll is due to transfer in October 2010, and grants in December 2010. Preparatory work in both SSC Ltd and NERC for the practicalities of the remaining transfers is well underway.

Following NERC's Migration to SSC Oracle Financials, a number of process and technical issues have emerged which have been, and

continue to be, addressed by the Service Review Group. This group is comprised of representatives of all the migrated Councils and SSC Ltd (as a customer of SSC services); together with the SSC service delivery team (as a provider of SSC services). All known issues have been captured to form an orderly focus for resolution and a basis for entry into full SSC service delivery. However, it is my view as Accounting Officer that the current level of internal control falls below our expectations. Transitional problems persist, in particular, within the security and internal controls framework that govern Cash Management and Accounts Payable processes. I am confident that current plans will improve this situation by the end of 2010.

The planned pre-recess sign-off of the Annual Report and Accounts for NERC was delayed this year due to difficulties in agreeing related party and other transactions between the Research Councils and the RCUK Shared Services Centre Ltd owing to weaknesses in the robustness of some information. Plans are in place to address the causes of this delay in the future.

SSC Ltd put considerable effort into establishing an internal control framework in preparation for NERC's migration to its financial services in April 2010. Recent work undertaken by RCIAS has identified that despite these efforts, the internal control framework operating within the Accounts Payable system should be improved. In the meantime, NERC Finance has implemented additional controls and checks to compensate for these weaknesses whilst SSC Ltd concludes its programme to test and correct their own controls.

Plans exist to ensure the internal control operating in the Payroll and Grants doesn't diminish during migration of these systems to the SSC.

Halley VI

The British Antarctic Survey is involved in a substantial project to replace the Halley Antarctic research station. The project is intrinsically risky, all the materials for the new base have to be shipped from the UK and assembled on site during the two months of Antarctic 'summer'. The project is tightly controlled employing PRINCE2 project methodology and a project assurance process styled on the OGC Gateway approach. However, despite these controls, the project has encountered substantial contractual issues that are currently being worked through with the contractor. The project delivery remains on target and the expected cost remains within the range approved by Council.

Statement of Internal Control

continued

RRS *Discovery* Replacement Project

The Large Facilities Capital Fund (LFCF) is providing £48m, out of a total cost of £75m to replace RRS *Discovery*. A contract has been agreed enabling construction to commence in 2010, with the new vessel being available for science programmes in 2014. The project is tightly controlled employing PRINCE2 project methodology and the OGC Gateway project assurance process.

5. Review of effectiveness

As Accounting Officer, I have responsibility for reviewing the effectiveness of the system of internal control operating within NERC. My review of the effectiveness of the system of internal control is informed by:

- Director's Annual Statements on Internal Control (DASIC)
- the advice of the Audit Committee
- the advice of the Risk Management Network
- the work of the internal auditors
- comments made by the external auditors in their management letter and other reports
- feedback from other consultancy and review activities

The DASIC exercise provides the main evidence informing the nature of my own assurance on internal controls as these assurances come from senior managers responsible for the development and maintenance of the NERC internal controls framework.

The Audit Committee has a duty to monitor NERC's internal control systems. The Audit Committee receives reports directly, and through internal audit, and may refer any matter within its terms of reference to NEB or Council and make recommendations concerning actions to be taken.

A network of managers responsible for the practical implementation of the NERC Risk Management Strategy in each of NERC's business units has been established and is known as "the Risk Management Network". The Network also includes members with special relevant expertise, for example a representative from corporate Health and Safety and the NERC Security Adviser. The Network is chaired by the NERC Health and Safety Adviser on behalf of the Director Responsible for Risk and meets twice a year, ad hoc meetings may be convened to discuss and prepare advice on issues of urgency. Whilst the Health and Safety Adviser is acting as Chair of the Network, responsibility for representing the NERC Health and Safety community is passed to a representative from

Corporate Health and Safety, thereby preserving the independence of the Chair. A member of the NERC Audit Committee attends Network meetings as an observer.

As part of its governance responsibilities, NEB undertakes a monthly review of top risks and receives an annual risk management report from the Risk Management Network. This report sets out for NEB details of the more significant risk management activity undertaken in the preceding year. The report also considers the issues NERC will need to address in managing risk going forward.

To help discharge this responsibility, NEB has approved a Risk Management Policy and Risk Management Strategy; agreed to the creation of a Risk Management Network; and to the appointment of a Risk Management Co-ordinator. The purpose of this post is to support the Director Responsible for Risk and the Chair of the Risk Management Network in carrying out their responsibilities; and to focus management attention to risk management and provide a central reference point for risk management issues within NERC.

I have been advised on the implications of the result of my review of the effectiveness of the system of internal control by NEB, the Audit Committee and the Director Responsible for Risk. Plans to address weaknesses identified and measures to ensure continuous improvement of the system of internal control are in place.

6. Significant internal control problems (if applicable)

My review did not identify any significant internal control weaknesses within NERC.

Professor Alan J Thorpe

11 October 2010

The Certificate and Report of the Comptroller and Auditor General to the Houses of Parliament

I certify that I have audited the financial statements of the Natural Environment Research Council for the year ended 31 March 2010 under the Science and Technology Act 1965. These comprise the Operating Cost Statement, the Statement of Financial Position, the Statement of Cash Flows, the Statement of Changes in Taxpayers' Equity and the related notes. These financial statements have been prepared under the accounting policies set out within them. I have also audited the information in the Remuneration Report that is described in that report as having been audited.

Respective responsibilities of the Chief Executive and auditor

As explained more fully in the Statement of Chief Executive Responsibilities, the Chief Executive is responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. My responsibility is to audit the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require me and my staff to comply with the Auditing Practices Board's Ethical Standards for Auditors.

Scope of the Audit of the Financial Statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the Natural Environment Research Council's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the Natural Environment Research Council; and the overall presentation of the financial statements.

In addition, I am required to obtain evidence sufficient to give reasonable assurance that the expenditure and income reported in the financial statements have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

Opinion on Regularity

In my opinion, in all material respects the expenditure and income have been applied to the purposes intended by Parliament and the financial transactions conform to the authorities which govern them.

Opinion on financial statements

In my opinion:

- the financial statements give a true and fair view of the state of the Natural Environment Research Council's affairs as at 31 March 2010 and of its net expenditure, changes in taxpayers' equity and cash flows for the year then ended; and
- the financial statements have been properly prepared in accordance with the Science and Technology Act 1965 and Secretary of State directions issued thereunder with the approval of Treasury.

Opinion on other matters

In my opinion:

- the part of the Remuneration Report to be audited has been properly prepared in accordance with Secretary of State directions issued under the Science and Technology Act 1965 with the approval of Treasury; and
- the information given in the Delivering the Strategy and Management Commentary sections of the Annual Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which I report by exception

I have nothing to report in respect of the following matters which I report to you if, in my opinion:

- adequate accounting records have not been kept; or
- the financial statements are not in agreement with the accounting records or returns; or
- I have not received all of the information and explanations I require for my audit; or
- the Statement on Internal Control does not reflect compliance with HM Treasury's guidance.

Report

I have no observations to make on these financial statements.

Amyas C E Morse

*Comptroller and Auditor General
National Audit Office
157-197 Buckingham Palace Road
Victoria, London, SW1W 9SP
Date: 4 November 2010*

Operating cost statement for the year ended 31 March 2010

	Notes	2010 £000	2009 £000
EXPENDITURE			
Staff costs	5b	109,311	105,595
Staff early retirements	6	3,915	1,762
Grants and training	7	154,224	143,923
Other operating costs	8	168,919	157,687
Depreciation	10(a), 10(c)	22,430	23,116
Amortisation	11	605	579
Loss on joint venture	10(d)	383	-
Impairment of property, plant and equipment	10(a), 10(c), 12	13,485	1,082
Total expenditure		473,272	433,744
INCOME			
	4	(60,601)	(52,683)
NET OPERATING COSTS			
		412,671	381,061
Notional cost of capital	16	10,698	10,057
CEH restructuring		(1,421)	(642)
Finance lease interest		1,036	1,170
Interest receivable	9	(2)	(12)
Unwinding of discount	15	498	505
Change in discount rate	15	190	-
(Profit)/Loss on disposal of fixed assets		(752)	149
NET EXPENDITURE FOR THE YEAR		422,918	392,288
Reversal of notional cost of capital		(10,698)	(10,057)
NET EXPENDITURE FOR THE YEAR AFTER REVERSAL OF NOTIONAL COST OF CAPITAL		412,220	382,231

All activities are continuing.

The notes on page 62 to 94 form part of these accounts.

Statement of financial position as at 31 March 2010

	Notes	31 March 2010		31 March 2009		1 April 2008	
		£000	£000	£000	£000	£000	£000
Non-current assets							
Property, plant and equipment	10(a)	346,480		349,720		329,648	
Intangible assets	11	666		1,026		1,462	
Non-current receivables	13(b)	162		341		1,058	
Investment property	10(c)	-		1,677		1,700	
Joint venture and investments	10(d)	1,239		1,623		47	
TOTAL NON-CURRENT ASSETS		348,547		354,387		339,915	
Current assets							
Assets classified as held for sale	12	3,861		628		634	
Trade and other receivables	13(a)	41,529		48,269		35,264	
Cash and cash equivalents	17	12,761		14,602		8,872	
		58,151		63,499		44,770	
TOTAL ASSETS		406,698		417,886		378,685	
Current liabilities							
Trade and other payables	14(a)	(70,483)		(74,079)		(61,733)	
Provisions	15	(3,319)		(5,784)		(7,970)	
Total current liabilities		(73,802)		(79,863)		(69,703)	
Non-current assets plus current assets less current liabilities		332,896		338,023		308,982	
Non-current liabilities							
Provisions	15	(8,951)		(13,493)		(16,761)	
Trade and other payables	14(b)	(11,712)		(13,005)		(14,208)	
Assets less liabilities		312,233		311,525		278,013	
Equity							
Government grant reserve		2,540		2,824		3,313	
Revaluation reserve		94,488		106,492		97,200	
Income and expenditure		215,003		201,939		177,192	
Donated asset reserve		202		270		308	
TOTAL GOVERNMENT FUNDS		312,233		311,525		278,013	

The notes on page 62 to 94 form part of these accounts.

Professor Alan J Thorpe
 Chief Executive & Accounting Officer
 11 October 2010

Statement of cash flows for the year ended 31 March 2010

	Notes	2010 £000	2009 £000
CASH FLOWS FROM OPERATING ACTIVITIES			
Net operating expenditure after cost of capital and interest		(424,403)	(391,146)
Reversal notional cost of capital		10,698	10,057
Depreciation charge		22,430	23,116
Amortisation charge		605	579
Release from government grant and donated asset reserves		(495)	(527)
Loss on joint venture		383	-
Impairment charged to net expenditure account		13,485	1,082
Decrease in provisions		(6,273)	(6,447)
Decrease / (increase) in trade and other receivables		6,919	(12,288)
(Decrease) / increase in trade and other payables		(3,690)	12,249
Net cash outflow from operating activities		(380,341)	(363,325)
CASH FLOWS FROM INVESTING ACTIVITIES			
Payments to acquire property, plant and equipment		(40,695)	(30,492)
Payments to acquire intangible assets		(201)	(122)
Payments to acquire financial assets		-	(1,623)
Receipts from disposal of property, plant and equipment, intangible assets and investments		1,688	92
Net cash outflow from investing activities		(39,208)	(32,145)
CASH FLOWS FROM FINANCING ACTIVITIES			
Grant-in-aid received	3	408,000	395,760
Funding received from other bodies	3	10,907	6,546
Capital element of finance lease payments		(1,199)	(1,106)
Net cash inflow from financing activities		417,708	401,200
Net (decrease) / increase in cash and cash equivalents in the period		(1,841)	5,730
Cash and cash equivalents at the beginning of the period		14,602	8,872
CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD		12,761	14,602

The notes on page 62 to 94 form part of these accounts.

Statement of changes in taxpayers' equity for the year ended 31 March 2010

	Notes	Government grant reserve ⁽ⁱ⁾ £000	Accumulated income & expenditure reserve £000	Revaluation reserve £000	Donated asset reserves ⁽ⁱⁱ⁾ £000	Total government funds £000
Balance at 1 April 2008 ⁽ⁱⁱⁱ⁾		3,313	177,192	97,200	308	278,013
CHANGES IN RESERVES FOR 2008-09						
Net gain on revaluation of property, plant and equipment	10(a)	-	-	13,964	-	13,964
Net gain on revaluation of intangible assets	11	-	-	26	-	26
Net loss on revaluation of investment property	10(c)	-	-	(20)	-	(20)
Net loss on revaluation of assets held for sale	12	-	-	(6)	-	(6)
Release to net expenditure		(489)	-	-	(38)	(527)
Reversal of notional cost of capital	16	-	10,057	-	-	10,057
Expenditure for the year		-	(392,288)	-	-	(392,288)
Transfer between reserves		-	4,672	(4,672)	-	-
Total recognised income and expense for 2008-09		(489)	(377,559)	9,292	(38)	(368,794)
Grant-in-aid received	3	-	395,760	-	-	395,760
Funding received from other bodies	3	-	6,546	-	-	6,546
Balance at 31 March 2009		2,824	201,939	106,492	270	311,525
CHANGES IN RESERVES FOR 2009-10						
Net loss on revaluation of property, plant and equipment	10(a)	-	-	(4,960)	-	(4,960)
Net gain on revaluation of intangible assets	11	-	-	266	-	266
Net loss on revaluation of investment property	10(c)	-	-	(600)	-	(600)
Net loss on revaluation of assets held for sale	12	-	-	(190)	-	(190)
Release to net expenditure		(427)	-	-	(68)	(495)
Reversal of notional cost of capital	16	-	10,698	-	-	10,698
Expenditure for the year		-	(422,918)	-	-	(422,918)
Transfer between reserves		143	6,377	(6,520)	-	-
Total recognised income and expense for 2009-10		(284)	(405,843)	(12,004)	(68)	(418,199)
Grant-in-aid received	3	-	408,000	-	-	408,000
Funding received from other bodies	3	-	10,907	-	-	10,907
Balance at 31 March 2010		2,540	215,003	94,488	202	312,233

Notes:

(i) The government grant reserve relates to assets transferred from Southampton University to NOCS. The reserve is released to the net expenditure account over the asset lives to match depreciation.

(ii) The donated asset reserve relates to assets which were donated in 2005/06 and were valued at current value on receipt and included in note 10.

(iii) The impact of adopting the new standards on opening equity is explained in more detail in note 27.

The notes on page 62 to 94 form part of these accounts.

NOTES TO THE ACCOUNTS

1. Statement of accounting policies

a. Basis of accounting

- i. The accounts have been prepared under the historical cost convention, modified to include revaluation of property, plant and equipment, intangible assets and inventories in accordance with the Financial Reporting Manual (FRM). The accounting policies contained in the FRM apply International Financial Reporting Standards (IFRS) as adapted or interpreted for the public sector context. The accounts, which give a true and fair view, have been prepared in accordance with The Science and Technology Act 1965 and with directions made by the Department for Business, Innovation and Skills.
- ii. The accounts meet the accounting and disclosure requirements of the Companies Act 1985 and accounting standards issued or adopted by the Accounting Standards Board in as far as these requirements are appropriate in accordance with the FRM.
- iii. The accounts of all NERC owned establishments have been incorporated into these accounts.
- iv. These financial statements are presented in Sterling, NERC's functional currency, and all amounts have been rounded to the nearest thousands.

Transition to IFRS

The Council has applied IFRS 1 in preparing these financial statements. The Council's transition date is 1 April 2008. The Council prepared its opening IFRS statement of financial position at that date.

The Council has prepared the financial statements for the year ending 31 March 2010 as the first full financial statements under IFRS. As a result the 31 March 2009 financial statements have been converted from UK GAAP to IFRS and have become the comparatives.

The statement of financial position was previously prepared in accordance with the generally accepted accounting principles in the United Kingdom (UK GAAP) until 31 March 2008. UK GAAP differs in some areas from IFRS. In preparing the statement of financial position under IFRS, management has amended certain accounting and valuations applied in the previous GAAP financial statements to comply with IFRS.

The impact of the transition to IFRS with reconciliations of the operating cost statement and the statement of financial position from UK GAAP to IFRS is shown in detail in note 27.

Adoption of standards effective in 2009-10

The following revised standards and interpretations have been applied by the Council from 1 April 2009:

International Financial Reporting Standards (IFRS/IAS)		Effective date
IFRS 7	Amendments to IAS 39 and IFRS 7: reclassification of financial assets	1 July 2008
IFRS 7	Update to amendments to IAS 39 and IFRS 7: reclassification of financial assets	1 July 2008
IFRS 7	Amendment to IFRS 7 – improving disclosures about financial instruments	1 January 2009
IFRS 8	Operating Segments	1 January 2009
IAS 23	Borrowing Costs	1 January 2009
IAS 1	Presentation of Financial Statements	1 January 2009
IFRS 1	Amendments to IFRS 1: First-time adoption of IFRS and IAS 27: Consolidated and Separate Financial Statements	1 January 2009

IFRS effective in 2009-10 but not relevant

The following amendments were mandatory for accounting periods beginning on or after 1 April 2009 but were not relevant to the operations of the Council:

International Financial Reporting Standards (IFRS/IAS)		Effective date
IFRS 2	Share-based Payment (amendment)	1 January 2009
IAS 32	IAS 32 Financial Instruments: Presentation and IAS 1 Financial Instrument Presentation Amendments – Puttable Financial Instruments and Obligations Arising on Liquidation	1 January 2009

Notes to the accounts

continued

International Financial Reporting Interpretations Committee (IFRIC)		Effective date
IFRIC 15	IFRIC 15: Agreements for the construction of Real Estate	1 January 2009
IFRIC 16	IFRIC 16: Hedges of a Net Investment in a Foreign operation	1 October 2008

Standards, interpretations and amendments to published standards which are not yet effective

The IASB and IFRIC issued the following standards and interpretations with an effective date after the date of these financial statements. They have not been adopted early by the Council and NERC does not anticipate that the adoption of these standards and interpretations will have a material impact on the Council's reported income or net assets in the period of adoption.

Effective for the Council for the financial year beginning 1 April 2010:

International Financial Reporting Standards (IFRS/IAS)		Effective date
IAS 39	Amendments to IFRIC 9 and IAS 39: Embedded derivatives	30 June 2009
IFRS 1	Revised version of IFRS 1 with improved structure	1 July 2009
IFRS 3	Business Combinations	1 July 2009
IAS 27	Consolidated and Separate Financial Statements	1 July 2009
IAS 39	Amendment to IAS 39 Financial Instruments: Eligible hedged items	1 July 2009
International Financial Reporting Interpretations Committee (IFRIC)		
IFRIC 17	Distribution of Non-Cash Assets to Owners	1 July 2009
IFRIC 18	Transfers of Assets from Customers	1 July 2009

Effective for the Council in future years:

International Financial Reporting Standards (IFRS/IAS)		Effective date
IFRS 1	Amendment to IFRS 1 – additional exemptions for first-time adopters	1 October 2010
IFRS 2	Amendment to IFRS 2 – group cash-settled share-based payment transactions	1 October 2010

b. Going concern

There are uncertainties that could affect funding in the future - additional cuts for the public sector as a whole were signalled by the Chancellor's emergency budget on 22 June, and we are also aware that the Department is responding to a Cabinet Office request to review, along with all Departments, its Arms Length Bodies. At the date of issue of this report however, we remain satisfied that the preparation of accounts on a going concern basis remains appropriate. Any deficit shown on the income and expenditure reserve will be extinguished over time, having regard to the resource and capital budgets to which NERC can be expected to have access.

c. Property, plant and equipment and depreciation

Property, plant and equipment

Expenditure on property, plant and equipment includes the purchase of land and buildings, construction and services projects, and equipment valued at £5,000 or above.

Property, plant and equipment are stated at the lower of depreciated historical cost or valuation. Costs of acquisition, comprising only those costs that are directly attributable to bringing the asset into working condition for its intended use, are capitalised. Land, buildings, ice stations in Antarctica, ships and aircraft are independently and professionally revalued every five years. These assets are subject to annual indexation when a full revaluation is not completed.

All UK land and buildings were valued by Powis Hughes & Associates in 2009/10 in accordance with the Statements of Asset Valuation Practice and Guidance prepared by The Royal Institution of Chartered Surveyors. The basis of valuation was open market value for either existing or alternative use where this could be established or depreciated replacement cost in the case of specialised scientific buildings. The Antarctic Buildings that had a nil net book value were revalued by Ms Jill Thompson, member of The Royal Institution of Chartered Surveyors in 2006/07.

Notes to the accounts

continued

The four research ships, RRS *Discovery*, RRS *James Clark Ross*, RRS *Ernest Shackleton* and RRS *James Cook*, were revalued in 2008/09 by E.A. Gibson Shipbrokers Ltd. All aircraft were also revalued in 2008/09 by the International Bureau of Aviation Group Limited.

Two large value assets transferred from Southampton University in 2006/07 were valued by Hydroid Europe in 2007/08. All other plant and equipment and motor vehicles are revalued using relevant indices.

Any surplus or deficit on revaluation is taken to a revaluation reserve, except that any permanent diminution in value is charged to the operating cost statement in the year in which it is recognised.

Increased depreciation charges arising from the revaluation are matched by annual transfers from the revaluation reserve to the income and expenditure reserve. On the disposal of a revalued asset, that element of the revaluation reserve which becomes realised as a result is transferred directly to the income and expenditure reserve.

Freehold land is not depreciated. All other tangible fixed assets are depreciated in order to write off the value of the asset less its estimated residual value over their estimated useful economic lives using modified reducing balance depreciation methodology. These lie within the following ranges:

Leasehold land	-	over the terms of the lease
Freehold buildings	-	up to 50 years or valuer's estimates of economic life
Long leasehold buildings	-	up to 50 years (or the length of the lease if less)
Short leasehold buildings	-	over the length of the lease
Antarctic ice stations	-	up to 35 years or valuer's estimates of remaining useful life
Plant and machinery	-	10 to 15 years
Ships and aircraft	-	minimum of 20 years for ships, 15 years for aircraft
Scientific, office and major computing equipment	-	5 to 10 years
Motor vehicles	-	3 to 7 years
Assets under construction	-	not depreciated until brought into use

Property, plant and equipment are depreciated from date when they are available for use. The residual values of assets are reviewed on an annual basis.

Component accounting

Property, plant and equipment may have parts with different useful lives. In accordance with the provisions of IAS 16 each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

Donated assets

Assets which are gifted by third parties are classified as donated assets. These are shown at the lower of current value on receipt or the value of the service provided where the asset is overspecified for its intended use. Donated assets are revalued, depreciated and subject to impairment reviews in the same way as other assets. The amount capitalised is credited to the donated asset reserve. Each year, an amount equal to the depreciation charge on the asset and any impairment will be released from the donated asset reserve to the operating cost statement. No cost of capital charge is imposed.

Investments in joint ventures

NERC has a single joint venture, the RCUK Shared Services Ltd. Investments in joint ventures are accounted for using the equity method in accordance with IAS 31 and are carried at cost less any provision for impairment. The profit or loss for the year is credited or charged to the operating cost statement in the year that it arises.

d. Intangible assets

Intangible assets comprise purchased or developed computer software and websites and are stated at the lower of historical cost less accumulated amortisation or valuation. Intangibles are given definite useful lives and are amortised over a period not exceeding ten years on a straight line basis over the useful life of the asset from the date of use based on nil residual value.

e. Investment property

In accordance with IAS 40, any property (land or building) held by the Council mainly to earn rental income and/or for capital appreciation is recognised as an investment property in the statement of

Notes to the accounts

continued

financial position. Investment properties are stated at the lower of depreciated historical cost or valuation – that is, they are treated consistently with the treatment of property, plant and equipment.

f. Impairment

The carrying amounts of the Council's property, plant and equipment, intangible assets and financial assets are reviewed at each statement of financial position date to determine whether there is any indication of impairment: property, plant and equipment, intangible assets and financial assets are considered to be impaired if objective evidence indicates that one or more events have had a negative effect on the estimated future cash flows of the assets. If any such indication exists, the assets' recoverable amounts are estimated.

An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. To the extent the asset has not previously been revalued, impairment losses are recognised in the operating cost statement.

g. Assets held for sale

Where a non-current asset, whose value will be recovered principally through sale rather than through continuing use, is available for its immediate sale in its present condition and its sale is highly probable, it is classified as 'held for sale' and presented separately on the face of the statement of financial position. A sale is highly probable where: there is evidence of management commitment; there is an active programme to locate a buyer and complete the plan; the asset is actively marketed for sale at a reasonable price; and the sale will normally be completed within 12 months from the date of classification.

Assets held for sale are stated at the lower of net book value (carrying amount) and fair value less costs to sell. These assets are not depreciated. Depreciation ceases at the date an item of property, plant and equipment is classified as an asset held for sale.

h. Employee benefits

Under IAS 19 'Employee Benefits' an entity is required to recognise short term employee benefits when an employee has rendered service in exchange for those benefits. Included in the financial statements is an accrual for the outstanding employee paid holiday entitlement at 31 March 2010 on an undiscounted basis.

i. Ownership of equipment purchased with NERC research grants

Equipment purchased by an Institution with research grant funds supplied by the NERC belong to the Institution and are not included in NERC's property, plant and equipment. Through the Conditions of Grant applied to funded Institutions, NERC reserves the right to determine the disposal of such equipment and how any disposal proceeds are to be utilised.

j. Government grants receivable and other income

Grant-in-aid for revenue and general capital purposes is credited to the income and expenditure reserve. Grant-in-aid for the purchase of specific assets is credited to the government grant reserve and released to the operating cost statement over the useful life of the asset in amounts equal to the annual depreciation charge.

Other operating income is shown net of trade discounts, value added tax and other taxes. Contributions from other government bodies and contributions and grants from other bodies are treated as financing and credited to the general reserve in the same way as grant-in-aid.

k. Research and development

As an organisation wholly engaged in research, NERC does not classify research and development expenditure separately in the accounts. It is reported under operating costs in the operating cost statement.

Intellectual property rights arising from the Council's research and development have not been included in these accounts as their market value cannot be readily estimated. The anticipated annual income generated from such rights is not material in value and is credited to the operating cost statement on receipt.

l. Insurance

In line with government policy, NERC carries its own risks in respect of employment of staff, buildings,

Notes to the accounts

continued

equipment, stocks, etc, except where there exists a statutory requirement to insure or where commercial insurance represents better value for money.

m. Foreign currencies

Foreign currency balances representing cash or amounts to be received or paid in cash ('monetary items') are expressed in pound sterling at the rate(s) of exchange ruling at the statement of financial position date. Non monetary items that are measured at fair value in a foreign currency are translated using the spot exchange rate at the date the value is determined. Non monetary items that are measured at historical cost are translated using the spot exchange rate at the time of the transaction. Transactions in foreign currencies are recorded at the rate ruling at the time of the transaction. All exchange differences are taken to the operating cost statement.

n. Value Added Tax

As NERC is partially exempt for VAT purposes, irrecoverable VAT is charged to the relevant expenditure category or included in the capitalised purchase cost of property, plant and equipment. Where output tax is charged or input tax is recoverable the amounts are stated net of VAT. NERC has charitable status for VAT purposes.

o. Pension and early retirement costs

Payments are made to the Research Councils' Pension Scheme in respect of superannuation benefits for Council staff. The costs of early retirements are charged to NERC's accounts in the year in which the binding decision is taken to release staff and liabilities recognised.

Payments by the Council of early retirement lump sums are recoverable from the Research Councils' Pension Scheme when recipients achieve normal retirement age. Recoverable amounts are recognised as receivables in these accounts and offset against annual staff restructuring costs.

p. Notional costs

In line with HM Treasury requirements, a notional interest charge is included in the accounts to reflect a charge for the use of capital in the business in the year, as the Council has no specific interest bearing debt. In accordance with Treasury guidance, the calculation is based on a 3.5% rate of return on average net assets employed (2008-09: 3.5%) less amounts held with Paymaster General and donated asset reserve.

q. Cash and cash equivalents

Cash and cash equivalents comprise cash balances and deposits which are repayable on demand.

r. Derivatives and other financial instruments

Due to the non-trading nature of its activities and the way in which NERC is financed, NERC is not exposed to the degree of financial risk faced by non-public sector entities. Moreover, financial instruments play a much more limited role in creating or changing risk that would be typical of the listed companies to which IAS 32, 39 and IFRS7 mainly apply. NERC has very limited powers to borrow or invest surplus funds and financial assets and liabilities are generated by day to day operational activities and are not held to change the risks facing NERC in undertaking its activities.

Trade receivables

Trade receivables are not interest bearing and are carried at original invoice amount less allowance for impairment. Provision for impairment is established when there is objective evidence that the Council will not be able to collect all amounts due according to the original terms of the receivable. The amount of provision is the difference between the carrying amount and recoverable amount and is recognised in the operating cost statement.

Trade and other payables

Trade and other payables are recognised in the period in which related money, goods or services are received or when a legally enforceable claim against NERC is established or when the corresponding assets or expenses are recognised.

s. Provisions

Provisions are recognised when it is probable that NERC will be required to settle a present obligation and a reliable estimate can be made of that obligation. The obligation is normally the amount that NERC would rationally pay to settle the obligation at the statement of financial position date or to transfer it to a third party at that time.

Notes to the accounts

continued

This may require estimating the future cash flows in current-year prices (i.e. at the price level prevailing in the year covered by the accounts) and, where the time value of money is material, discounting them at the standard public sector real rate set by HM Treasury- currently 1.8% for pension provisions and 2.2% for all other provisions.

t. Decommissioning costs

Decommissioning costs are recognised as soon as the obligation exists. For Antarctic stations and other assets in the course of construction the percentage completion method will be used to determine the current obligation.

A specific provision is established to cover the current value of the expected future costs of decommissioning the asset.

u. Finance lease

NERC has the use of a ship for which substantially all risks and rewards of the asset are transferred to the Council. The asset is capitalised and is subject to the same revaluation policy as other property, plant and equipment and is depreciated over the shorter of its estimated useful economic life or the lease period, with the outstanding lease obligations (net of interest) shown in payables. Finance charges are charged to the operating cost statement over the period of the agreement in accordance with the interest rate within the contract.

v. Operating leases

Operating lease rentals are charged to the operating cost statement on a straight line basis over the period of the lease.

w. Key judgements and decisions

In accordance with the requirements of the Government Financial Reporting Manual the key judgements and estimates included in the accounts are on a reasonable basis. Specific policies for judgemental areas such as decommissioning costs and provisions are shown above.

2. Analysis of net expenditure by business units

NERC's primary operating segments are business units, which correspond with the way NERC is organised and managed.

	British Antarctic Survey £000	British Geological Survey £000	Centre for Ecology and Hydrology £000	National Oceanography Centre £000	Proudman Oceanographic Laboratory £000	Science and Innovation ⁽ⁱ⁾ £000	Responsive Mode £000	Other £000	Total £000
Expenditure									
Staff costs	22,907	32,584	20,253	15,776	5,869	1,537	318	10,067	109,311
Staff early retirements	-	3	-	9	-	-	-	3,903	3,915
Grants and training	196	552	868	48	124	68,172	84,180	84	154,224
Other operating costs	24,565	15,153	11,660	20,086	2,036	79,134	197	16,088	168,919
Depreciation	-	-	-	-	-	-	-	22,430	22,430
Amortisation	-	-	-	-	-	-	-	605	605
Loss in joint ventures	-	-	-	-	-	-	-	383	383
Impairment of property, plant and equipment	-	-	-	-	-	-	-	13,485	13,485
Internal transfers	(2,452)	(2,352)	(3,061)	(4,865)	(832)	8,846	7,682	(2,966)	-
Total expenditure	45,216	45,940	29,720	31,054	7,197	157,689	92,377	64,079	473,272
Income ⁽ⁱⁱ⁾	(4,073)	(24,667)	(10,479)	(7,265)	(2,359)	(11,013)	(547)	(198)	(60,601)
NET OPERATING COSTS	41,143	21,273	19,241	23,789	4,838	146,676	91,830	63,881	412,671

i). During the year staff at Plymouth Marine Laboratory, Scottish Association for Marine Science and the Marine Biological Association, transferred from NERC payroll and are thus not included in S&I staff costs. A change in our contractual relationship means these costs are now scored as contract expenditure.

ii). Business units receive external funding for research from the UK public sector, European Commission and private sector. In addition they receive other operating income, such as software and datasales and royalties and license fees from intellectual property.

NERC's assets and liabilities are shared across all business units which reflect the way NERC is managed. Disclosure of assets and liabilities by segment is therefore not required.

Notes to the accounts

continued

ANALYSIS OF NET EXPENDITURE BY BUSINESS UNITS FOR 2008-09

	British Antarctic Survey £000	British Geological Survey £000	Centre for Ecology and Hydrology £000	National Oceanography Centre £000	Proudman Oceanographic Laboratory £000	Science and Innovation £000	Responsive Mode £000	Other £000	Total £000
Expenditure									
Staff costs	20,605	31,585	20,554	9,987	5,527	4,504	304	12,529	105,595
Staff early retirements	-	-	-	-	-	-	-	1,762	1,762
Grants and training	81	514	865	51	70	62,988	79,548	(194)	143,923
Other operating costs	23,656	16,881	13,472	22,993	2,749	62,848	71	15,017	157,687
Depreciation	-	-	-	-	-	-	-	23,116	23,116
Amortisation	-	-	-	-	-	-	-	579	579
Impairment of property, plant and equipment	-	-	-	-	-	-	-	1,082	1,082
Internal transfers	(1,513)	(1,166)	(2,258)	(4,642)	(1,238)	7,070	7,730	(3,983)	-
Total expenditure	42,829	47,814	32,633	28,389	7,108	137,410	87,653	49,908	433,744
Income	(4,152)	(20,911)	(11,769)	(5,479)	(2,171)	(1,103)	(122)	(6,976)	(52,683)
NET OPERATING COSTS	38,677	26,903	20,864	22,910	4,937	136,307	87,531	42,932	381,061

3. Grant-in-aid and income from other bodies

Under the FReM, NDPBs regard grants and grant-in-aid received for revenue purposes as contributions from controlling parties giving rise to a financial interest in the body. As a result, grant-in-aid received for revenue purposes is credited to the income and expenditure reserve rather than being recognised as income in the operating cost statement. Grant-in-aid for capital purposes is only credited to the government grant reserve if it is for the purchase of a specific asset with all other capital grant-in-aid credited to the income and expenditure reserve. Where other income is received and there is no exchange transaction, this is also treated as financing and credited to the income and expenditure reserve.

The table below shows a summary of the grant-in-aid and income from other bodies that are treated as financing inflow and have been transferred to the income and expenditure reserve during 2009/10:

	2010 £000	2009 £000
Grant-in-aid received	408,000	395,760
Funding received from other bodies		
Government Departments	5,256	2,628
Other Research Councils	4,623	3,585
Other Public Sector	1,028	333
	10,907	6,546
	418,907	402,306

Notes to the accounts

continued

4. Income

	2010 £000	2009 £000
a. Income from government departments		
Department for Environment Food and Rural Affairs	5,300	4,738
Department for Business, Innovation and Skills	597	920
Ministry of Defence	190	292
Department for International Development	18	152
Environment Agency	1,056	1,860
Department of Enterprise, Trade and Investment Northern Ireland	2,847	1,472
Foreign and Commonwealth Office	948	1,122
Department for Communities and Local Government	269	263
Total income from government departments	11,225	10,819
b. Income from other bodies		
European Community	4,481	4,326
Other Research Councils	567	956
Other Public Sector	5,364	6,056
Private Sector	17,449	13,041
Total income from other bodies	27,861	24,379
c. Other operating income		
Software and data sales	3,018	2,176
Scientific publications	326	426
Library and administrative services	668	960
Property and equipment rentals	1,885	1,410
Sales of products	62	69
Lecture fees, seminars and training courses	85	249
Promotional items	171	195
Royalties and licence fees from intellectual property	1,933	2,151
Reimbursement of expenditure	10,028	7,371
Other income	2,844	1,951
Total other operating income	21,020	16,958
d. Release of government grant reserve	495	527
TOTAL INCOME	60,601	52,683

Notes to the accounts

continued

5. Salaries and wages

a. Staff numbers

The average number FTE's (Full Time Equivalent) staff employed during the year was made up as follows:

	2010 No.	2009 No.
Administrative	519	531
Scientific	1,194	1,210
Professional and technical	408	363
Marine and Antarctic contract	254	257
Staff on inward secondment/loan	2	3
Agency/temporary and contract staff	77	84
	2,454	2,448

Note: The total number of staff reported in the Annual Report are calculated based on head count as at the 31 March 2010, whereas the above figures are average FTE's for the year.

The total staff number still include the NERC staff at Plymouth Marine Laboratory, Scottish Association for Marine Science and the Marine Biological Association, although their payroll costs are no longer included under the staff costs below resulting in a £3.9m reduction in staff costs.

b. Staff costs

	2010 £000	2009 £000
Salaries and wages	83,663	82,842
Social Security costs	6,585	6,618
Other pension costs (note 5d)	19,063	16,135
	109,311	105,595

In 2009/10 temporary and contract staff costs total £4,742,248 (2008-09: £4,813,688) and are included in the figures above.

Agency costs of £1,739,346 (2008-09: £2,206,214) and charges by SSC Ltd in respect of staff transferred under TUPE Regulations and seconded back to NERC of £1,408,325 (2008-09: £2,308,113) have been included in operating costs.

The total amount capitalised for staff costs in 2009/10 is £258,374 (2008-09: £453,718). This relates to an estimated 7.2 full time equivalents for those staff employed by NERC that are adding value to assets such as NERC estates and those engaged in project managing or building of assets.

c. Remuneration to Council and Committee Members/Peer Review College

The following are included in staff costs, note 5(b); other operating costs, note 8 and staff costs, note 5(d) pensions.

	2010 £000	2009 £000
Council Members' fees	96	111
Committee Members/Peer Review	346	331
Other emoluments	116	112
	558	554

Notes to the accounts

continued

Committee members may receive £170 per day (2008-09: £166).
 Committee Chairmen may receive £230 per day (2008-09: £223).
 British Geological Survey Programme Board members receive £3,430 per annum (2008-09: £3,000).
 British Geological Survey Programme Board Chairman receives £4,575 per annum (2008-09: £4,000).
 Chairmen of Boards of Council receive £9,110 per annum with effect from 1/10/2009 (2008-09: £8,970).
 All emoluments are non-pensionable.
 Council Members are normally employed on fixed term contracts not exceeding 4 years.
 Peer Review College members receive honoraria of £1,000 per annum (2008-09: £1,000). The Peer Review College Associate members receive honoraria of £500 per annum (2008-09: £500).
 Peer Review College Members and Associate Members are initially employed for 1 year commencing 1 June.

Number of Council, Committee and Board Members as at 31 March

	2010 No.	2009 No.
Council Members*	16	17
Committee/Peer Review College and Board Members	441	395
	457	412

* includes Chief Executive and Chairman

Council* / Committee and Peer Review College Members' emoluments fell into the following bands:

	2010 No.	2009 No.
to £5,000	442	398
£5,001 to £10,000	12	11
£10,001 to £15,000	1	1
£15,001 to £20,000	1	1
	456	411

* The Chief Executive does not receive any remuneration for his work on NERC Council and is therefore not included in this table. His emoluments are disclosed separately in the remuneration report

d. Superannuation Pension scheme payments

	2010 £000	2009 £000
Payments in respect of the Research Councils' Pension Scheme (RCPS)	15,881	15,904
Payments to pension schemes other than the RCPS:		
Merchant Navy Officers' Pension Fund	2,859	45
Merchant Navy Officers' Pension Plan	2	3
Merchant Navy Ratings' Pension Fund	198	-
Merchant Navy Ratings' Pension Plan	5	5
Partnership Pensions	118	178
	19,063	16,135

Notes to the accounts

continued

Most employees of NERC are members of the Research Councils' Pension Scheme (RCPS) which is a defined benefit scheme but is accounted for as a defined contribution scheme funded from annual grant-in-aid on a pay-as-you-go basis as the Council is unable to identify its share of the underlying assets and liabilities. The pension scheme is analogous to the Principal Civil Service Pension Scheme, except that while the scheme provides retirement and related benefits based on final emoluments, redundancy and injury benefits are funded by the Council. The pension scheme is administered by the Research Councils' Joint Superannuation Services, and the finances administered by the Biotechnology and Biological Sciences Research Council (BBSRC). The scheme is a multi-employer scheme, for which a separate Research Councils' Pension Scheme Account is published.

From 1 April 1994 the Council has paid employer's contributions to the Research Councils' Pension Scheme, at a percentage of scheme members' pensionable pay as assessed by the Government Actuary's Department on a periodical basis. The actuarial valuation for the scheme was carried out as at 31 March 2006 by a qualified independent actuary. Based on this valuation it was agreed to increase the employer's contribution rate from 21.3% to 26%, effective from 1 April 2010. The employers' contribution rate of 21.3% therefore applies to these accounts. NERC paid costs in the year of £15,881,440 (2008-09: £15,903,946). A full actuarial valuation is now due as at 31 March 2010.

With effect from 30 July 2007, in line with arrangements throughout the civil service, a new career average RCPS pension arrangement called NUVOS was introduced with a 2.3% accrual rate. All new employees with effect from this date were given the option of joining the NUVOS scheme or alternatively a Partnership Pension Account. This is a stakeholder-type defined contributions scheme where the employer pays a basic contribution of between 3% and 12.5% (depending on the age of the member) into a stakeholder pension product. The employee does not have to contribute but where they do make contributions, these will be matched by the employer up to a limit of 3% (in addition to the employer's basic contribution). NERC also contributes a further 0.8% of pensionable salary to cover the cost of risk benefit cover (death in service and ill health retirement).

The Council also paid contributions during the year to a number of other multi-employer pension schemes for specific groups of employees, details of these schemes are shown below:-

Scheme	Rate of contribution	Year of last valuation
Merchant Navy Officers' Pension Fund [^]	11.9%	2009
Merchant Navy Officers' Pension Plan	5.1%	2000
Merchant Navy Ratings' Pension Fund [*]	2.0%	2008
Merchant Navy Ratings' Pension Plan	5.1%	2000

[^] The Merchant Navy Officers' Pension Fund (New Section) was subject to an actuarial valuation as at 31 March 2009 and showed a deficit overall. This year NERC made a one off payment of £2,817,513 in full settlement of our share of the deficit. The NERC element of the scheme is now fully funded and no liability in respect of the 31 March 2009 valuation is outstanding at 31 March 2010.

^{*} The Merchant Navy Ratings' Pension Fund closed on 31 May 2001. A new actuarial valuation was undertaken at 31 March 2008. During the year the trustees agreed the outstanding deficit with the members' employing organisations.

NERC held a provision for our share of the deficit amounting to £2,449,582 last year and made a one off payment this year in full settlement of £2,724,138. The NERC element of the scheme is now fully funded and no current liabilities exist at 31 March 2010.

On closure of the fund members transferred to the RCPS or the new Merchant Navy Ratings' Pension plan which is a money purchase scheme. For members who opted for section 148 revaluation of accrued pension, 2% of the residual employer's contributions are still paid to the closed scheme.

Notes to the accounts

continued

6. Staff restructuring / early retirements ⁽ⁱ⁾

	2010 £000	2009 £000
Annual compensation payments	88	228
Redundancy compensation payments	1,420	346
Early retirement lump sums	1,135	271
Compensation in lieu of notice	130	-
Early retirement liability	1,142	1,349
Recoverable early retirement lump sums	-	(432)
	3,915	1,762

(i). All payments were within contracted entitlement.

7. Grants and training

	2010 £000	2009 £000
a. Research grants - analysis by theme		
Climate systems	14,564	14,235
Biodiversity	17,954	17,549
Sustainable use of natural resources	8,193	8,008
Earth system science	17,023	16,639
Natural hazards	6,912	6,756
Environment, pollution and human health	5,543	5,418
Technology	2,318	2,266
	72,507	70,871
b. Research contracts - analysis by theme		
Climate systems	12,325	9,012
Biodiversity	6,950	6,616
Sustainable use of natural resources	4,697	4,317
Earth system science	10,259	7,439
Natural hazards	4,846	3,934
Environment, pollution and human health	4,200	3,816
Technology	4,748	4,658
	48,025	39,792
c. Post Graduate training awards		
Research students	23,332	22,965
Research masters	3,600	4,006
Research fellows	6,760	6,289
	33,692	33,260
TOTAL GRANTS AND TRAINING AWARDS	154,224	143,923

Notes to the accounts

continued

8. Other operating costs

	Notes	2010 £000	2009 £000
Rent and rates		1,144	2,474
Maintenance, cleaning, heating and lighting		5,692	3,810
Office supplies, printing and stationery		3,321	4,532
Laboratory supplies, computing and field equipment		12,941	14,812
Postage, telephone and other telecommunications		1,659	1,693
Hospitality	(i)	635	698
Audit fee	(ii)	80	61
Travel and subsistence		8,888	9,687
Ships and aircraft operations		13,575	15,120
External training		1,475	1,087
SSC operating costs	(iii)	2,626	1,281
Professional and research services by outside bodies	(iv)	116,571	102,118
Operating leases		7	5
Increase in allowance for trade receivables		305	309
		168,919	157,687

Notes:

(i). Hospitality costs include room hire, accommodation and catering costs for meetings, workshops and conferences.

(ii). The costs for audit fee include external audit fees for IFRS costs for transition costs of £11.8k and statutory audit fee of £66k. There are no non-audit fees.

(iii). SSC operating costs include the costs for services such as procurement, information technology and recruitment.

(iv). The cost for professional and research services by outside bodies includes international subscriptions of £67.6m (2008/09: £50.4m), bought in services of £38.8m (2008/09: £33.2m) including SSC Ltd set up costs of £6.8m (2008/09: £6.7m) and other services including consultancy, advertising, waste disposal and medical/legal costs.

9. Interest receivable

	2010 £000	2009 £000
Interest on bank balances	2	12

Notes to the accounts

continued

10(a). Property, plant and equipment

Cost or valuation	Land, buildings and Antarctic stations (i), (iv) & (vii) £000	Plant and equipment (v), (vi) and (viii) £000	Ships and aircraft (iii), (iv) & (vii) £000	Motor vehicles (ii) £000	Total £000
At 1 April 2009	320,055	112,185	183,455	7,717	623,412
Additions	24,922	11,606	3,553	614	40,695
Revaluation	(5,107)	843	1,000	228	(3,036)
Disposals	(634)	(10,772)	-	(985)	(12,391)
Impairment	(13,195)	-	(8)	-	(13,203)
Transfer to assets held for sale	(7,508)	-	(981)	-	(8,489)
At 31 March 2010	318,533	113,862	187,019	7,574	626,988
Depreciation					
At 1 April 2009	113,129	66,331	88,493	5,739	273,692
Charge for the year	5,949	9,819	5,878	776	22,422
Revaluation	404	-	-	-	404
Disposals	(501)	(10,473)	-	(948)	(11,922)
Transfer to assets held for sale	(3,243)	-	(845)	-	(4,088)
At 31 March 2010	115,738	65,677	93,526	5,567	280,508
NET BOOK VALUE					
AT 31 MARCH 2010	202,795	48,185	93,493	2,007	346,480
At 1 April 2009	206,926	45,854	94,962	1,978	349,720

Notes:

- (i) Cost / Valuation includes £19,781,225 in respect of Freehold Land which is not depreciated (31 March 2009: £17,415,659).
- (ii) Including specialised Antarctic Vehicles.
- (iii) The NBV of the leased ship is £21,648,623 (2008/09: £23,593,066). The annual depreciation charge on this asset held under the finance lease was £2,034,409 for the year (2008/09: £1,818,856).
- (iv) The net impairment costs of £13,484,762 as shown in the operating cost statement consist of impairment costs of £14,947,554 less the reversal of a previous impairment loss for the Oxford property for the amount of £1,462,792. These costs are included in the expenditure for the year in the statement of changes in taxpayers' equity.
The net impairment costs of £13,484,762 relate to the net reduction in value to below the depreciated historical costs of land, buildings and Antarctic stations of £13,195,107, ships and aircraft of £8,432, assets held for sale of £212,666 and investment property of £68,557. The net impairment costs of £13,195,107 for land, building and Antarctic stations are as follows:
- Reversal of the impairment of the Oxford property (-£1,462,792) which was impaired in 2005/06, but which has now been reversed as a surrender value has been agreed for this property;
- Keyworth (£6,189,369), Wallingford (£6,369,192), Capel Dewi (£26,245), East Kilbride (£120,600), Eskdalemuir (£198,501), Bush (£1,328,615) and Lancaster properties (£95,823) being impaired to their professionally revalued amounts;
- Rothera property fell below the depreciated historic costs following downward indexation (£329,554).
- (v) Includes donated assets with a value of £201,657 and is offset by a donated asset reserve. There is no restriction on the use of these assets.
- (vi) The Assets Under Course of Construction within Plant and Equipment include the Council's individual share of £9,774,165 (2008/09: £7,721,164) of the RCUK Shared Services Centre currently being developed by the seven Research Councils.
- (vii) There has been no effect on the depreciation charge as a result of the application of component depreciation (IAS 16) Assets have historically been split between land and buildings and sites are further analysed into individual significant buildings. Ships have also been accounted for based on the component accounting rules. It has been decided not to apply component depreciation for the aircraft based on the advice given by our professional valuers, IBA Group. Furthermore, Polaris House is solely occupied as a standard office building with no requirement for any part or element to be replaced at any set intervals or for any major regular inspections. There are therefore no component parts in Polaris House based on the principles of IAS 16. Day to day servicing is deemed repair and maintenance.
- (viii) Prior to migration to the Shared Services Centre, NERC disposed of 434 plant & equipment Zero Net Book Value assets, which amounted for £9,464,345 of the disposals of both costs and depreciation under the plant and equipment category.

Notes to the accounts

continued

Cost or valuation	Land, buildings and Antarctic stations £000	Plant and equipment £000	Ships and aircraft £000	Motor vehicles £000	Total £000
At 1 April 2008	309,597	100,118	169,377	7,786	586,878
Additions	12,002	16,274	1,732	484	30,492
Revaluation	(1,162)	(378)	13,161	(211)	11,410
Disposals	(115)	(3,829)	-	(342)	(4,286)
Impairment	(267)	-	(815)	-	(1,082)
At 31 March 2009	320,055	112,185	183,455	7,717	623,412
Depreciation					
At 1 April 2008	107,467	61,296	82,816	5,651	257,230
Charge for the year	5,777	10,770	5,677	889	23,113
Revaluation	-	(2,306)	-	(467)	(2,773)
Disposals	(115)	(3,429)	-	(334)	(3,878)
At 31 March 2009	113,129	66,331	88,493	5,739	273,692
NET BOOK VALUE					
AT 31 MARCH 2009	206,926	45,854	94,962	1,978	349,720
At 1 April 2008	202,130	38,822	86,561	2,135	329,648

10(b). The net book value of land, buildings and Antarctic stations comprises:

	2010 £000	2009 £000	2008 £000
Freehold	49,103	46,238	46,815
Long leasehold	96,624	102,784	106,441
Short leasehold	835	767	560
Antarctic stations	11,868	14,143	15,192
Under construction	44,365	42,994	33,122
TOTAL NET BOOK VALUE	202,795	206,926	202,130

Notes to the accounts

continued

10(c). Investment property

Cost or valuation	£000
At 1 April 2009	1,729
Revaluation	(600)
Impairment	(69)
Transfer to assets held for sale	(1,060)

At 31 March 2010

-

Depreciation	
At 1 April 2009	52
Charge for the year	8
Transfer to assets held for sale	(60)

At 31 March 2010

-

Net Book Value at 31 March 2010

-

Cost or valuation	
At 1 April 2008	1,749
Revaluation	(20)

At 31 March 2009

1,729

Depreciation	
At 1 April 2008	49
Charge for the year	3

At 31 March 2009

52

NET BOOK VALUE AT 31 MARCH 2009

1,677

Net Book Value at 1 April 2008

1,700

NERC held one investment property at 31 March 2009, Penrhos Road in Bangor, which has been transferred to assets held for sale category on 31 March 2010 (note 12).

The rental income for 2009-10 was £58,800 (2008-09: £58,800) and operating costs were £3,172 (2008-09: £0).

	2010	2009
	£000	£000
Minimum lease payments to be received		
Within one year	29	59
Between one and five years	-	74
	29	133

Notes to the accounts

continued

10(d). Joint venture and investments

Cost or valuation	A' share RCUK Shared Services Centre £	'B' shares RCUK Share Services Centre £	Evolutec £	Total £
At 1 April 2008	1	-	47,250	47,251
SSC shares acquired	-	1,622,660	-	1,622,660
Disposals	-	-	(47,250)	(47,250)
At 1 April 2009	1	1,622,660	-	1,622,661
SSC losses	-	(383,397)	-	(383,397)
At 31 March 2010	1	1,239,263	-	1,239,264

The Council owns one 'A' ordinary share of £1 in the RCUK Shared Services Centre Ltd (SSC Ltd). Each of the seven Research Councils owns one share and they are all joint investors in the project. 'A' shares have voting rights. The investment has been classified as a 'joint venture' between the Research Councils.

During the 2008/09 financial year the Council acquired 1,622,660 'B' shares of £1 in the SSC Ltd. These shares represent 20.54% of total shares issued of 7,900,000 and have no voting rights. The investment has been classified as a 'joint venture' between the Research Councils with NERC's individual share being 20.54% and the other six Research Councils owning the remaining 79.46% or 6,277,340 shares.

In accordance with IAS31 the value of the shares has been reduced by the cumulative losses incurred by the RCUK Shared Services Centre of £383k, which have been charged directly to the operating cost statement. The losses relate to depreciation incurred by SSC Ltd but not recharged to its customers, who are the seven Research Councils.

SSC Ltd was incorporated on 1 August 2007 to set up the Shared Services Centre. Its principal place of business is at North Star House, North Star Avenue, Swindon, Wiltshire. During the 2008/09 financial year the procurement services and information technology services were implemented for all seven Research Councils, as well as the human resources services for two Councils. During 2009/10 several Councils have gone live with payroll and finance services, including purchase-to-pay services. All remaining services for the Councils will be implemented during the 2010/11 financial year. Capital commitments for the SSC Ltd total £6.3m, of which the NERC share amounts to 20.54% or £1.3m.

For the period ended 31 March 2010 the draft financial statements of RCUK Shared Services Centre Limited shows revenue of £64.8m (2008/09: £25.8m) and administration costs of £65.3m (2008/09: £27.2m) resulting in a loss for the year of £0.5m (2008/09: £1.4m). The balance sheet totals are £7 'A' shares and £7,900,000 'B' shares issued to the Research Councils and £5.2m cash (2008/09: £7.1m).

The Council disposed of its 252,000 shares in Evolutec PLC in December 2008.

Notes to the accounts
continued

11. Intangible assets

	Software licenses £000	Website costs £000	Total £000
Cost or valuation			
At 1 April 2009	8,163	211	8,374
Additions	201	-	201
Revaluation	266	-	266
Disposals	(627)	-	(627)
At 31 March 2010	8,003	211	8,214
Amortisation			
At 1 April 2009	7,192	156	7,348
Charge for the year	550	55	605
Disposals	(405)	-	(405)
At 31 March 2010	7,337	211	7,548
Net Book Value			
At 31 March 2010	666	-	666
Net Book Value			
At 31 March 2009	971	55	1,026
Cost or valuation			
At 1 April 2008	8,103	210	8,313
Additions	122	-	122
Revaluation	25	1	26
Disposals	(87)	-	(87)
At 31 March 2009	8,163	211	8,374
Amortisation			
At 1 April 2008	6,749	102	6,851
Charge for the year	525	54	579
Disposals	(82)	-	(82)
At 31 March 2009	7,192	156	7,348
NET BOOK VALUE			
AT 31 MARCH 2009	971	55	1,026
Net Book Value			
At 1 April 2008	1,354	108	1,462

Intangible assets comprise of separately acquired computer software licences and internally developed website costs. They are stated at the lower of historical costs less accumulated amortisation or valuation.

After an initial three-month revaluation at the end of June 2009, the intangible assets were revalued on a monthly basis using the HM Treasury GDP deflator figures.

If the intangible assets were recognised using the cost model, the NBV would have been £654k at 31 March 2010 (£999k at 31 March 2009). The revaluation surplus amounted to £12k at 31 March 2010 (£27k at 31 March 2009).

Notes to the accounts

continued

12. Assets held for sale

	£000
Net cost or valuation	
At 1 April 2009	628
Transfers	5,401
Revaluation	(190)
Disposals	(1,765)
Impairment	(213)
NET BOOK VALUE AT 31 MARCH 2010	3,861
Net cost or valuation	
At 1 April 2008	634
Revaluation	(6)
NET BOOK VALUE AT 31 MARCH 2009	628
Net Book Value at 1 April 2008	634

Notes:

The assets held for sale comprise:

- Buildings and land owned at the Bidston site.

These assets were re-classified from the property, plant and equipment category to held for sale at 31 March 2008. Management is committed to sale and a buyer has been located. The sale is expected to complete within 12 months from the statement of financial position date. The Bidston property has been impaired down to their agreed sale price.

- Buildings and land owned at Penrhos Road, Bangor.

These assets were re-classified from the investment property category to held for sale at 31 March 2010. Management is committed to sale and a sale price has been agreed with a buyer. The sale is expected to complete within 12 months from the statement of financial position date.

- Buildings and land leased at the Oxford site.

These assets were re-classified from the property, plant and equipment category to held for sale as at 31 March 2010. Management is disposing of this lease and a surrender value has been agreed. Surrender is expected to occur within 12 months from the statement of financial position date.

- Piper Navajo aircraft.

This asset was deemed surplus to requirements as at 31 March 2010. Management decided to dispose of this asset and the sale was completed by 30 April 2010.

During the year the buildings and land owned at the Monks Wood site were disposed of. These assets were re-classified from the property, plant and equipment category to held for sale at 30 June 2009. The sale was completed by 31 December 2009.

Notes to the accounts

continued

13. Receivables

	£000	2010 £000	£000	2009 £000	£000	2008 £000
(a) Current assets: trade and other receivables						
Trade receivables		4,223		5,527		4,693
Intra Government						
Central Government bodies	2,093		15,715		5,531	
Local Authorities	3		198		205	
		2,096		15,913		5,736
Other receivables		5,644		3,285		4,924
Prepayments		26,170		18,259		13,490
Accrued income		4,149		5,733		6,560
Provision for trade receivables		(753)		(448)		(139)
		41,529		48,269		35,264
(b) Non-current receivables: trade and other receivables						
Other receivables		162		341		1,058
TOTAL RECEIVABLES		41,691		48,610		36,322

14. Payables

	£000	2010 £000	£000	2009 £000	£000	2008 £000
(a) Current liabilities: trade and other payables						
Trade payables ⁽ⁱ⁾		-		3,929		4,795
Intra Government						
Central Government bodies	-		336		192	
Local Authorities	-		3		227	
		-		339		419
Taxation & Social Security		161		26		1,175
Other payables		21,648		21,962		18,943
Accruals & deferred income ⁽ⁱ⁾		41,763		43,458		34,201
Obligation under finance leases		1,292		1,198		1,101
Monies held on behalf of EU Programme Collaborators		4,961		3,167		1,099
Monies held on behalf of the Integrated Ocean Drilling Programme Collaborators		658				
		70,483		74,079		61,733
(b) Non-current liabilities: trade and other payables						
Obligation under finance leases		11,712		13,005		14,208
TOTAL PAYABLES		82,195		87,084		75,941

Note:

(i). Any trade payables not paid prior to migration to the Shared Services Centre at 1 April 2010 have been accrued for and are included in the Accruals & deferred income category above.

Notes to the accounts

continued

15. Provisions for liabilities and charges

	Antarctic Treaty costs ² £000	Shared Services Centre ⁴ £000	Early retirements £000	Other liabilities ³ £000	CEH restructuring ⁵ £000	Total £000
At 1 April 2008	7,829	788	3,553	2,604	9,957	24,731
Change in discount rate	-	-	(45)	(11)	-	(56)
Write back of provisions no longer required	(2,227)	(132)	(93)	-	(1,491)	(3,943)
Amounts provided in year	-	227	1,349	1,987	849	4,412
Unwinding of discount	172	-	48	61	224	505
Provision utilised in year	(183)	(70)	(1,671)	(1,019)	(3,429)	(6,372)
Provision at 31 March 2009	5,591	813	3,141	3,622	6,110	19,277
Changes in provisions for 2009-10:						
Change in discount rate	-	-	182	-	8	190
Write back of provisions not required	(65)	(119)	-	(85)	(1,465)	(1,734)
Amounts provided in year	-	205	1,142	(97)	44	1,294
Unwinding of discount	123	-	140	104	131	498
Provision utilised in year	(424)	(315)	(2,559)	(3,042)	(915)	(7,255)
Provision at 31 March 2010	5,225	584	2,046	502	3,913	12,270

Notes :

1. The discount rate used is 1.8% for pension provisions and 2.2% for all other provisions (2008/09: 3.2% for pension provisions and 2.2% for all other provisions).
2. Antarctic Treaty costs represents the Council's liability to remove any items from the Antarctic no longer used.
3. Other liabilities include claims made against NERC and commitments to onerous operating lease payments. These have been estimated on the likelihood of the leases being assigned during the remainder of their term.
4. The Research Councils and RCUK Shared Services Ltd are in the process of developing a Shared Services Centre to carry out the central functions of human resources, finance, procurement and information technology across the Councils. As a result some Research Councils will incur redundancy costs, particularly where existing staff live a distance away from Swindon where the centre is situated. The Research Councils have collectively agreed that they will be jointly liable for all necessary redundancies. The Councils have calculated their likely redundancy liabilities in order to make a provision. A funding allocation model was developed and agreed by all the Research Councils and this identified the proportion of SSC project spend and liability that each individual Council would incur. The total provision for redundancies has been apportioned using this model. The table below shows, for each Council the amount that they need to provide for redundancies of their own staff in accordance with IAS 37 as determined at 31 March 2010. Some Councils will incur a cost for terminating their existing systems, and these costs are being shared between the Councils. The provision for all seven Councils are then split and shared in accordance with an agreed predetermined ratio as detailed in the table below. Each Council takes their agreed share of their own liability and then contributes or receives contributions from the other Research Councils to reach the provision which is recorded in their own statement of financial position.
5. CEH restructuring costs include NERC's liability for CEH staff restructuring, staff removal, decommissioning and removal costs.

Notes to the accounts

continued

Analysis of expected timing of discounted cashflows

	Antarctic Treaty costs £000	Shared Services Centre £000	Early retirements £000	Other liabilities £000	CEH restructuring £000	Total £000
Provision due within one year	49	584	991	378	1,317	3,319
Between one and five years	2,765	-	805	124	1,939	5,633
Between five and ten years	489	-	250	-	664	1,403
Thereafter	1,922	-	-	-	(7)	1,915
Provision at 31 March 2010	5,225	584	2,046	502	3,913	12,270
Provision due within one year	936	813	-	964	3,071	5,784
Between one and five years	1,519	-	2,668	1,090	2,598	7,875
Between five and ten years	-	-	471	876	439	1,786
Thereafter	3,136	-	2	692	2	3,832
Provision at 31 March 2009	5,591	813	3,141	3,622	6,110	19,277

NERC SSC provision	£000
At 1 April 2008	1,620
Write back of provisions no longer required	(396)
Provision utilised in year	(315)
Provision at 31 March 2009	909
Changes in provision for 2009-10:	
Amounts provided in year	154
Provision utilised in year	(491)
Provision at 31 March 2010	572

	AHRC £000	BBSRC £000	ESRC £000	EPSRC £000	MRC £000	NERC £000	STFC £000	SSC ¹ £000	Total £000
Opening provision required for Council's own redundancies at 1 April 2008	68	152	-	-	999	1,620	-	-	2,839
Opening provision system termination fee at 1 April 2008	-	-	-	-	1,000	-	-	-	1,000
Opening total provisions at 1 April 2008	68	152	-	-	1,999	1,620	-	-	3,839
Net movement in provisions for 2008-09	-	279	-	-	31	(711)	520	-	119
Closing total provisions at 31 March 2009	68	431	-	-	2,030	909	520	-	3,958
Net movement in provisions for 2009-10	15	23	-	-	(469)	(337)	(520)	174	(1,114)
Closing total provisions at 31 March 2010	83	454	-	-	1,561	572	-	174	2,844
% of total provision to be borne by the Council	1.33	20.54	1.83	8.24	26.98	20.54	20.54	0.00	100.00
Net provision required for each Council	38	584	52	234	767	584	584	-	2,844

1. SSC redundancy figures relate to Research Council staff originally transferred under the Transfer of Undertakings (Protection of Employment) Regulations 2006 to the RCUK Shared Services Centre Limited, but which have since been found in scope for redundancy.

Notes to the accounts

continued

16. Notional cost of capital

	2010 £000	2009 £000
Notional cost of capital	10,698	10,057

In accordance with Treasury guidance the reversal of the cost of capital charge has been written back to the accumulated income and expenditure reserve (see note 1p).

17. Cash and cash equivalents

	2010 £000	2009 £000	2008 £000
The following balances were held at 31 March:			
HM Paymaster General	3,250	8,776	5,530
Lloyds TSB	8,238	4,709	2,221
Bank of England	-	-	195
National Bank of Abu Dhabi	653	699	529
Other local commercial accounts	620	418	397
Balance at 31 March	12,761	14,602	8,872

18. Forward commitments on approved research grants, research contracts and studentships

	Research Grants £000	Postgraduate Training £000	Fellowships £000	Contracts £000	Total 2010 £000
2010-2011	91,959	22,860	7,165	25,876	147,860
2011-2012	57,310	14,901	4,795	7,097	84,103
2012-2013	32,361	6,225	2,723	5,785	47,094
2013-2014	9,128	53	1,065	4,119	14,365
2014-2015	1,410	-	492	224	2,126
2015-2016	314	-	-	-	314
	192,482	44,039	16,240	43,101	295,862

Notes to the accounts

continued

19. Amounts payable under finance lease obligations

NERC has the use of a research ship, the RRS *Ernest Shackleton*, under a lease contract. The amounts payable under the finance lease obligations are as follows:

	Payments £000	Interest £000	Net payments £000
As at 31 March 2010			
Within one year	2,234	942	1,292
Between one and five years	8,511	2,678	5,833
Thereafter	6,916	1,037	5,879
	17,661	4,657	13,004
As at 31 March 2009			
Within one year	2,234	1,036	1,198
Between one and five years	8,937	3,125	5,812
Thereafter	8,725	1,532	7,193
	19,896	5,693	14,203
As at 31 March 2008			
Within one year	2,334	1,233	1,101
Between one and five years	9,336	3,892	5,444
Thereafter	11,092	2,328	8,764
	22,762	7,453	15,309

20. Related party transactions

The Natural Environment Research Council (NERC) is a Non-Departmental Public Body (NDPB) sponsored by the Department for Business, Innovation and Skills (BIS).

BIS is regarded as a related party. During the year, NERC has had various material transactions with BIS and with other entities for which BIS is regarded as the parent Department, viz: Engineering and Physical Sciences Research Council, Biotechnology and Biological Sciences Research Council, Science and Technology Facilities Council, Medical Research Council, Economic and Social Research Council, the Arts and Humanities Research Council and the Technology Strategy Board.

On 29 January 2010, BIS transferred ownership of the National Core Store (located at Gilmerton, Edinburgh) to NERC as part of a government reorganisation. The property is included in property, plant and equipment, note 10(a).

In addition NERC has had various material transactions with other Government departments and other central Government bodies. NERC has also entered into various material transactions with the RCUK Shared Services Centre Ltd.

Notes to the accounts

continued

The tables below show the material transactions with our related parties agreed as part of the annual WGA exercise of confirmation of balances and transactions.

Related party transactions	Transactions NERC provider £000	Transactions NERC purchaser £000
Department for Business, Innovation and Skills - GIA	408,000	-
Department for Business, Innovation and Skills - other	693	-
Research Councils	21,484	32,313
Government departments	11,264	-
RCUK SSC Shared Services Ltd	14,402	13,332
Total	455,843	45,645

Related party balances	Balances NERC provider £000	Balances NERC purchaser £000
Research Councils	4,893	250
Government departments	629	-
RCUK SSC Shared Services Ltd	2,697	131
Total	8,219	381

During the year, NERC entered into the following material transactions with Council members in respect of payments under awards or contracts funded by NERC.

Council member	Number of awards or contracts	£
Professor A Fitter	2	86,068
Professor C Godfray	1	74,533
Professor A Watson	8	316,790
Professor J Slingo OBE	5	315,370

None of the above mentioned related parties were involved in the approval of awards to the Institution where he/she is a senior member of the staff.

In addition, NERC made the following aggregated payments in respect of NERC funded awards or contracts to Institutions where Council members are also senior members of staff.

Notes to the accounts

continued

Related party	Institution	Amount £000
Professor A Glover	University of Aberdeen	2,796
Professor P Curran	University of Bournemouth	59
Professor M Wilson	University of Leeds	13,958
Professor A Halliday	University of Oxford	6,556
Professor C Godfray		
Professor A Thorpe	University of Reading	11,162
Professor J Slingo OBE		
	University of Southampton	2,831
Professor M Lockwood	Science and Technology Facilities Council	6,803
Professor T Meagher	University of St Andrews	3,299
Professor A Watson	University of East Anglia	7,203
Professor A Fitter	University of York	2,678
Professor J Slingo OBE	Meteorological Office	3,065

21. Losses and special payments

During the year there were 68 losses totalling £590,738 as follows:

Type	Number	Amount £
Cash losses	12	2,047
Stores losses ¹	13	7,652
Constructive losses ²	1	176,000
Claims abandoned ³	42	405,039
	68	590,738

Notes:

- Stores losses include the loss of a rhenium package of £6,961.
- Constructive loss consists of the unavoidable rental costs accrued for pending the surrender of a lease.
- Claims abandoned include two EU losses totalling £354,273 (€397,122), eighteen debtor balances totalling £29,024 and four house loan debtors totalling £17,817.

Notes to the accounts

continued

22. Shareholdings

Other than shareholdings shown in note 10(d), the Council holds:

249 shares in Wallingford Hydrosolutions Ltd, a specialist technology transfer company. Wallingford Hydrosolutions Ltd is a leading research centre in the area of hydrology, water resources and environmental modelling. The shares are not publicly traded and currently have no open market value. At 31 March 2010 NERC's shareholding represented 24.9% of the issued share capital of Wallingford Hydrosolutions Ltd;

1,000 shares in Gordons 1 Ltd (formerly Cybersense Biosystems Ltd), now a holding company and supplier of field analytical tools and services to the environmental sector, which has relocated from Oxford to Reading. The shares are not publicly traded and currently have no open market value. At 31 March 2010 NERC's shareholding represented 0.06% of the issued share capital of Gordons 1 Ltd;

54,000 shares in Microbial Solutions Ltd, a company set up to commercialise innovative wastewater treatment technology, which uses a collection of non-pathogenic bacteria to cleanse toxic metal working fluids from the engineering industry. The shares are not publicly traded and currently have no open market value. At 31 March 2010 NERC's shareholding represented 23.49% of the issued share capital of Microbial Solutions Ltd; and

21,900 shares in Oxford Expression Technologies Ltd. The company is best known for producing a technology called 'flashBAC' that enables researchers in both academia and industry to produce proteins more easily and more cost-effectively using automated, high throughput techniques. The proteins can then be used for a variety of purposes such as in the development of new drugs and for more targeted research on understanding how proteins work in health and disease. The shares are not publicly traded and currently have no open market value. At 31 March 2010 NERC's shareholding represented 14.5% of the issued share capital of Oxford Expression Technologies Ltd.

23. Capital and lease commitments

Capital commitments

As at the date of these accounts, NERC is committed to a sum of £78m in respect of capital contracts. This includes the building of the RRS *Discovery* replacement ship of £54.7m to be completed in 2014/15, the Antarctic base Halley VI for £6.2m due to be completed in 2011/12, the BGS Keyworth Phase 2 Development for £13.1m due to be completed in 2011/12 and the NERC share of the Shared Services Centre development of £1.3m due to be completed in 2010/11.

The SSC capital commitment represents the Council's individual share of the future committed spend on the Shared Services Centre. Costs incurred to 31 March 2010 have been recognised through the operating cost statement and the SSC assets in the course of construction.

Lease commitments

The amounts payable under non-cancellable operating leases are as follows:

	2010 £000	2009 £000
Within one year	7	6
Between one and five years	30	26
	37	32

Bonds and guarantees

The Council has a number of bonds and guarantees that are lodged with Lloyds Bank and relate to overseas contracts, amounting to £1,132,323 at 31 March 2010 (2008/09: £1,667,680).

24. Contingent liabilities

There are no outstanding contingent liabilities at 31 March 2010.

25. Events after the reporting period

Since the grant letter being issued, the Department for Business, Innovation and Skills has advised that an administrative cost saving of £3.1m on our budget will be required for 2010-11. We expect to accommodate this reduction whilst still meeting our liabilities as they fall due. There are uncertainties that could affect funding in the future - additional cuts for the public sector as a whole were signalled by the Chancellor's emergency budget on 22 June, and we are also aware that the Department is responding to a Cabinet Office request to review, along with all Departments, its Arms Length Bodies. At the date of issue of this report however, we remain satisfied that the preparation of accounts on a going concern basis remains appropriate.

It was announced in the Budget on 22 June 2010 that the Government intends to adopt the Consumer Price Index (CPI) for the indexation of public service pensions from April 2011. This will have an impact upon the future operation of the pension schemes that NERC provides to employees.

There were no other post balance sheet events between the balance sheet date and 4 November 2010, the date when the Accounting Officer approved the accounts. The financial statements do not reflect events after this date.

26. Derivatives and other financial instruments

IFRS 7 Financial Instruments – Disclosures, IFRS 32 Financial Instruments – Presentation and IFRS 39 Financial Instruments – Recognition and Measurement require disclosure of the role which financial instruments have had during the period in creating or changing the risks an entity faces in undertaking its activities. Due to the largely non-trading nature of its activities and the way it is financed, the Council is not exposed to the degree of financial risk faced by non public sector entities. Moreover, financial instruments play a much more limited role in creating or changing risk than would be typical of the listed companies to which IFRS 7, 32 and 39 mainly apply. The Council has limited powers to borrow or invest funds and except for the finance lease contract (details of which are given in notes 1(l), 10(a) and 20) and relatively insignificant forward purchases of foreign currency, financial assets and liabilities are generated by day-to-day operational activities and are not held to change the risks facing the Council in undertaking its activities.

Liquidity risk

The Council's net revenue resource requirements are financed by grant-in-aid from its sponsor department, the Department for Business, Innovation and Skills. The capital expenditure, with the exception of the ship financed under the finance lease referred to above, is also financed through grant-in-aid. The Council is therefore not exposed to significant liquidity risks.

Interest rate risk

The Council is not exposed to significant interest rate risk.

Foreign currency risk

The Council's exposure to foreign currency risk is not currently significant. Foreign currency risk specific to the European Space Agency contract is being managed with its sponsor department, the Department for Business, Innovation and Skills.

Notes to the accounts

continued

27. Explanation of transition to IFRS

Analysis of IFRS adjustments to the statement of financial position at 1 April 2008

	UK GAAP*	IFRS adjustments					IFRS
		IAS 19 Employee benefits (i) £000	IAS 38 Intangible assets (ii) £000	IAS 40 Investment property (iii) £000	IFRS5 Assets held for sale (iv) £000	Reclassi- fications (v) £000	
	31 March 2008 £000						1 April 2008 £000
Non-current assets							
Property, plant and equipment	333,444	-	(1,462)	(1,700)	(634)	-	329,648
Intangible assets	-	-	1,462	-	-	-	1,462
Non-current receivables	-	-	-	-	-	1,058	1,058
Investment property	-	-	-	1,700	-	-	1,700
Financial assets	47	-	-	-	-	-	47
TOTAL NON-CURRENT ASSETS	333,491	-	-	-	(634)	1,058	333,915
Current assets							
Assets classified as held for sale	-	-	-	-	634	-	634
Trade and other receivables	36,322	-	-	-	-	(1,058)	35,264
Cash and cash equivalents	8,872	-	-	-	-	-	8,872
TOTAL CURRENT ASSETS	45,194	-	-	-	634	(1,058)	44,770
TOTAL ASSETS	378,685	-	-	-	-	-	378,685
Current liabilities							
Trade and other payables	(58,945)	(2,788)	-	-	-	-	(61,733)
Provisions	-	-	-	-	-	(7,970)	(7,970)
Total current liabilities	(58,945)	(2,788)	-	-	-	(7,970)	(69,703)
Non-current assets plus current assets less current liabilities	319,740	(2,788)	-	-	-	(7,970)	308,982
Non-current liabilities							
Provisions	(24,731)	-	-	-	-	7,970	(16,761)
Trade and other payables	(14,208)	-	-	-	-	-	(14,208)
TOTAL NON-CURRENT LIABILITIES	(38,939)	-	-	-	-	7,970	(30,969)
Assets less liabilities	280,801	(2,788)	-	-	-	-	278,013
Equity							
Government grant reserve	3,313	-	-	-	-	-	3,313
Revaluation reserve	97,200	-	-	-	-	-	97,200
Income and expenditure account	179,980	(2,788)	-	-	-	-	177,192
Donated asset reserve	308	-	-	-	-	-	308
TOTAL GOVERNMENT FUNDS	280,801	(2,788)	-	-	-	-	278,013

* This column represents previously published results under UK GAAP in IFRS format.

Notes to the accounts

continued

Explanation of transition to IFRS Analysis of IFRS adjustments to the operating cost statement at 31 March 2009

	UK GAAP*	IFRS adjustments			Cost of capital	IFRS
		IAS 19 Employee benefits	IAS 38 Intangible assets	IFRS5 Assets held for sale		
	31 March 2009 £000	(i) £000	(ii) £000	(iv) £000	£000	31 March 2009 £000
EXPENDITURE						
Staff costs	105,457	138	-	-	-	105,595
Staff early retirements	1,762	-	-	-	-	1,762
Grants and training	143,923	-	-	-	-	143,923
Other operating costs	157,687	-	-	-	-	157,687
Depreciation	23,746	-	(579)	(51)	-	23,116
Amortisation	-	-	579	-	-	579
Impairment of property, plant and equipment	1,082	-	-	-	-	1,082
Total expenditure	433,657	138	-	(51)	-	433,744
INCOME						
	(52,683)	-	-	-	-	(52,683)
Net operating costs	380,974	138	-	(51)	-	381,061
Notional cost of capital	10,156	-	-	-	(99)	10,057
CEH restructuring	(642)	-	-	-	-	(642)
Finance lease interest	1,170	-	-	-	-	1,170
Interest receivable	(12)	-	-	-	-	(12)
Unwinding of discount	505	-	-	-	-	505
Loss on disposal of fixed assets	149	-	-	-	-	149
NET EXPENDITURE FOR THE YEAR	392,300	138	-	(51)	(99)	392,288
Reversal of notional cost of capital						(10,057)
NET EXPENDITURE FOR THE YEAR AFTER REVERSAL OF NOTIONAL COST OF CAPITAL						382,231

* This column represents previously published results under UK GAAP in IFRS format.

Notes to the accounts

continued

Explanation of transition to IFRS Analysis of IFRS adjustments to the statement of financial position

	UK GAAP*	IFRS adjustments					IFRS
		IAS 19 Employee benefits	IAS 38 Intangible assets	IAS 40 Investment property	IFRS5 Assets held for sale	Reclassi- fications	
	31 March 2009 £000	(i) £000	(ii) £000	(iii) £000	(iv) £000	(v) £000	31 March 2009 £000
Non-current assets							
Property, plant and equipment	353,000	-	(1,026)	(1,677)	(577)	-	349,720
Intangible assets	-	-	1,026	-	-	-	1,026
Non-current receivables	-	-	-	-	-	341	341
Investment property	-	-	-	1,677	-	-	1,677
Financial assets	1,623	-	-	-	-	-	1,623
TOTAL NON-CURRENT ASSETS	354,623	-	-	-	(577)	341	354,387
Current assets							
Assets classified as held for sale	-	-	-	-	628	-	628
Trade and other receivables	48,610	-	-	-	-	(341)	48,269
Cash and cash equivalents	14,602	-	-	-	-	-	14,602
TOTAL CURRENT ASSETS	63,212	-	-	-	628	(341)	63,499
TOTAL ASSETS	417,835	-	-	-	51	-	417,886
Current liabilities							
Trade and other payables	(71,153)	(2,926)	-	-	-	-	(74,079)
Provisions	-	-	-	-	-	(5,784)	(5,784)
TOTAL CURRENT LIABILITIES	(71,153)	(2,926)	-	-	-	(5,784)	(79,863)
Non-current assets plus current assets less current liabilities	346,682	(2,926)	-	-	51	(5,784)	338,023
Non-current liabilities							
Provisions	(19,277)	-	-	-	-	5,784	(13,493)
Trade and other payables	(13,005)	-	-	-	-	-	(13,005)
TOTAL NON-CURRENT LIABILITIES	(32,282)	-	-	-	-	5,784	(26,498)
Assets less liabilities	314,400	(2,926)	-	-	51	-	311,525
Equity							
Government grant reserve	2,824	-	-	-	-	-	2,824
Revaluation reserve	106,492	-	-	-	-	-	106,492
Income and expenditure account	204,814	(2,926)	-	-	51	-	201,939
Donated asset reserve	270	-	-	-	-	-	270
TOTAL GOVERNMENT FUNDS	314,400	(2,926)	-	-	51	-	311,525

* This column represents previously published results under UK GAAP in IFRS format.

This table shows a reconciliation of all IFRS adjustments and includes transition adjustments from both the restatement of the statement of financial position at 1 April 2008 and the 2008/09 financial year.

Notes to the accounts

continued

Explanation of transition to IFRS

Analysis of IFRS adjustments to the statement of cash flows at 31 March 2009

	UK GAAP*	IFRS adjustments	IFRS
	31 March 2009 £000	£000	31 March 2009 £000
Cash flows from operating activities			
Net operating expenditure after cost of capital and interest	(362,167)	(28,979)	(391,146)
Interest received	12	(12)	-
Interest element of finance lease payments	(1,170)	1,170	-
Reversal notional cost of capital	-	10,057	10,057
Depreciation charge	-	23,116	23,116
Amortisation charge	-	579	579
Release from government grant and donated asset reserve	-	(527)	(527)
Impairment charged to net expenditure account	-	1,082	1,082
Decrease in provisions	-	(6,447)	(6,447)
Increase in trade and other receivables	139	(12,427)	(12,288)
Increase in trade and other payables	(139)	12,388	12,249
Net cash outflow from operating activities	(363,325)	-	(363,325)
Cash flows from investing activities			
Payments to acquire property, plant and equipment	(30,614)	122	(30,492)
Payments to acquire intangible assets	-	(122)	(122)
Payments to acquire financial assets	(1,623)	-	(1,623)
Receipts from disposal of property, plant and equipment, intangible assets and investments	92	-	92
Net cash outflow from investing activities	(32,145)	-	(32,145)
Cash flows from financing activities			
Grant-in-aid received	395,760	-	395,760
Funding received from other bodies	6,546	-	6,546
Capital element of finance lease payments	(1,106)	-	(1,106)
Net cash inflow from financing activities	401,200	-	401,200
Net increase in cash and cash equivalents in the period	5,730	-	5,730
Cash and cash equivalents at the beginning of the period	8,872	-	8,872
Cash and cash equivalents at the end of the period	14,602	-	14,602

* This column represents previously published results under UK GAAP in IFRS format.

Notes to the accounts

continued

Explanation of transition to IFRS Analysis of IFRS adjustments to restated taxpayers' equity at 31 March 2009

	Government grant reserve £000	Revaluation reserve £000	Income and expenditure £000	Donated asset reserve £000	Total government funds £000
Balance at 31 March 2009 under UK GAAP*	2,824	106,492	204,814	270	314,400
IFRS adjustments					
IAS 19 Employee benefits	-	-	(2,926)	-	(2,926)
IFRS 5 Assets held for sale	-	-	51	-	51
	-	-	(2,875)	-	(2,875)
Balance at 31 March 2009 under IFRS	2,824	106,492	201,939	270	311,525

* This row represents previously published government funds under UK GAAP.

Notes to the explanation of transition to IFRS:

- (i). Under UK GAAP short term employee benefits for services rendered by an employee were not recorded in the financial statements. IAS 19 requires an entity to recognise the outstanding employee holiday entitlements and an accrual for the amount due has been included in the financial statements.
- (ii). Capitalised software and website costs are recorded as tangible fixed assets under UK GAAP. IAS 38 requires these assets to be recognised as intangible non-current assets in the statement of financial position.
- (iii). Under UK GAAP investment properties were recorded under tangible fixed assets. IAS 40 requires investment property to be separately recognised in the statement of financial position.
- (iv). Assets held for sale were recorded under tangible fixed assets under UK GAAP. IFRS 5 requires these assets to be separately recognised in the statement of financial position.
- (v). Under IFRS receivables require a further analysis of amounts due within one year and amounts due after one year and have been reclassified under current and non-current assets accordingly. The same analysis is required for provisions and payables, where reclassifications have occurred between current and non-current liabilities. This was not required under UK GAAP.







Some research reported here may not yet have been peer-reviewed or published. For a list of NERC Council members see page 51. For members of our other committees see our website www.nerc.ac.uk.

Produced by the Natural Environment Research Council.
Editors: Adele Rackley, Tom Marshall, Tamera Jones.
Designer: Candy Sorrell, NERC, Swindon.

Inside cover: Iceland's Eyjafjallajökull volcano ash plume dispersing north of the UK, 15 April 2010. It was prepared from data received at the NERC-funded Satellite Receiving Station in Dundee which is part of NERC's NEODAAS facility. This one was received from NASA's Terra satellite.



Natural Environment Research Council

Polaris House, North Star Avenue, Swindon, SN2 1EU, Wiltshire, UK.

Tel: 01793 411500
Fax: 01793 411501
www.nerc.ac.uk



Published by TSO (The Stationery Office) and available from:

Online

www.tsoshop.co.uk

Mail, Telephone, Fax & E-Mail

TSO
PO Box 29, Norwich, NR3 1GN
Telephone orders/General enquiries: 0870 600 5522
Order through the Parliamentary Hotline *Lo-Call* 0845 702 3474
Fax orders: 0870 600 5533
Email: customer.services@tso.co.uk
Textphone: 0870 240 3701

The Parliamentary Bookshop

12 Bridge Street, Parliament Square,
London SW1A 2JX
Telephone orders/ General enquiries: 020 7219 3890
Fax orders: 020 7219 3866
Email: bookshop@parliament.uk
Internet: www.bookshop.parliament.uk

TSO@Blackwell and other Accredited Agents

Customers can also order publications from

TSO Ireland
16 Arthur Street, Belfast BT1 4GD
Tel: 028 9023 8451 Fax: 028 9023 5401

