

Cefas Annual Report and Accounts 2007–08

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Management commentary

Introduction

Significant developments in Cefas' market sectors this year confirm the continued relevance and importance of our applied science. For example, the importance of our seas to society, and to coastal communities in particular, is reflected in the recently published draft Marine Bill, in Defra's Fisheries 2027 vision, and in the European Union's Integrated Maritime Policy (the "Blue Book"). The world is becoming increasingly concerned about climate change, and there is a greater drive to assess the potential marine impacts and adaptation strategies. More widely, the implementation of the EU's Water Framework and Aquatic Animal Health Directives generates new requirements.

The breadth of future opportunities reflects Cefas' tremendous diversity. This report includes many examples of how we deploy world-class skills and services across all of the major branches of marine and aquatic science. We maintain and expand that outstanding scientific capability through investment in innovation, but we also recognise that effective collaboration helps us to flourish. Our unique relationships – across government, academia and industry – enable us to apply science to positive effect, and this year we invested considerable energy in developing those partnerships.

We are also successfully expanding our work beyond that done for Defra. These wider markets challenge us to improve our effectiveness and to be competitive. This year our turnover from sources other than Defra grew by £3 million, and we delivered more than 10% efficiency improvements and substantial savings in central support areas. We have also met all of our ministerial targets. These achievements are all the more remarkable given our extensive restructuring, delivered this year. We also accelerated our delivery of more detailed plans that address the strategic objectives outlined in the 2006 Laboratory Strategy Review. These plans were brigaded under the inter-related themes of business, science and people – which provide a framework for this report.

In making excellent progress towards our transformation objectives we have created considerable momentum, but we know this is only the start. The past year was undoubtedly a challenging one for all at Cefas, and the staff performance and commitment has been magnificent, for which I thank them.

No one underestimates the effort still needed to ensure that Cefas remains relevant and influential. The future is full of opportunities and challenges but I remain convinced that we are on the right track to embrace and address them, and to make a real difference for society for many more years.

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Richard Judge Chief Executive

Our science expertise

We work with government and other agencies, in the UK and internationally, to play a vital role in securing healthy and sustainable marine and freshwater environments. We provide leadership in understanding the challenges presented by climate change on aquatic environments and ecosystems, and associated options for mitigation and adaptation.

We achieve this by providing evidence-based scientific advice, managing related data and information, conducting world-class scientific research, and facilitating collaboration through wide-ranging international relationships.

We apply expertise gained through over 100 years of applied science and research to:

- conserve and enhance marine and wider aquatic environments and ecosystems
- ensure sustainable use of natural resources, in particular fish stocks
- collect, interpret and manage data to underpin decisions and to support longterm monitoring

- protect society and the economy from the effects of aquatic contaminants and fish diseases
- enable government and other customers' responses to environmental emergencies.

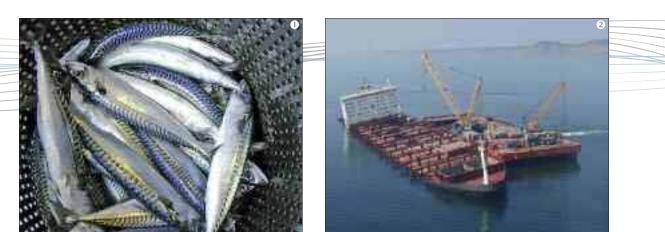
During 2007 our science and business units were re-aligned into four divisions: Aquatic Health and Hygiene, Environment and Ecosystems, Fisheries, and Monitoring and Programme Management. These changes will enable us to develop our business and strengthen our exchanges within and beyond Cefas.

Leading marine and aquatic science

At a programme or project level, we support our customers by integrating an appropriate blend of skills from differing public- and privatesector organisations to provide effective solutions.

We also work closely with the Inter-Laboratory Forum (see www.interlabforum.org) – six government laboratories with a pool of 9,000 skilled scientists and technical experts – to develop sampling strategies for contamination events in anticipation of future national emergencies. and technical organisations, both nationally and internationally. In 2007 we improved our strong ties with the University of East Anglia (UEA). In 2008 we plan to fund a joint lectureship at the UEA and develop several lines of collaborative research. The UEA's Professor Andrew Watkinson is also a member of the Cefas Science Advisory Committee that, under the chairmanship of Dr Joe Horwood, has strengthened external representation by inviting Dr Miles Parker (Director of Science at Defra) and others to join the Committee to shape Cefas' science strategy.

To enhance our reputation and capabilities, we continuously strengthen our links with scientific



Investment for the future

Retaining our leading-edge scientific position, and creating and keeping abreast of emerging knowledge, is essential to Cefas' future. Through our "seedcorn" and other funds, we maintain and develop:

- capability and long-term business growth that fully exploits our technology, knowledge and information
- a world-class reputation in selected areas of research
- activities that enhance the profile and networks of both Cefas and our leading scientists
- our people, through structured learning and development activities recognised by their outputs and value.

The scope of research and development (R&D) in our seedcorn portfolio for 2007–08 includes work on climate change, ecosystem modelling,

nanotechnology¹ and the development of biomolecular tools. We are pioneering ways of developing immune assays (analyses) without using animals for antibody production; and have developed molecular methods for identifying the structure of microbial communities in sediments. We have investigated the impact of cadmium on fish when it is present in nanoparticle form; and have successfully developed models to explain the contribution of nitrate to plankton production in the North Sea.

We have introduced new marine observation systems that use sediment-profile imaging cameras; and extended the deployment time of our SmartBuoys by working on fouling control. The success of our seedcorn-developed WaveNet programme, in support of flood forecasting for the Environment Agency (EA), means that the array of instruments will be extended in 2008.

Quality assurance confirmed

We are committed to delivering high-quality service and safety standards, and aim for continuous improvement. Our operations are accredited or certified against internationally recognised quality systems, which for our laboratories include ISO17020, ISO17025 and "Good Laboratory Practice" regulations (a framework within which regulatory studies are conducted). We are recognised as a "reference laboratory" at both national and European level. This means that we provide advice and accredited methods to throw light on specific pathogens of aquatic animals and humans (see www.cefas.co.uk/about-us/ accreditation.aspx). Our information technology (IT) and related activities are certified to ISO 9001:2000 by the United Kingdom Accreditation Service (UKAS), and we aim to extend ISO9001 certification more widely across Cefas over the coming years.

We proactively monitor and manage the impact of our activities, for example CO₂ emissions, through our environmental management system. This system is certified to ISO14001.

 Nanotechnology is the design, characterisation, production and application of structures, devices and systems by controlling shape and size at the nanometre scale.

- Basket of mackerel (Scomber scombrus)
- Removing containers from the stricken MSC Napoli. Environmental monitoring work continues
- Sediment-profile imaging camera, being deployed from the RV Cefas Endeavour



Applying research and new techniques

The Aquatic Health and Hygiene division conducts research and delivers advice on aquatic animal diseases (fish, shellfish, amphibians), food safety in bivalve molluscs, and the impacts of environmental contaminants on animal health. Based at our laboratory in Weymouth, Dorset, the division provides an integrated approach to these subjects.

Collaborating on disease control

A new European Union (EU) Aquatic Animal Health Directive is scheduled to come into force in August 2008. In preparation for this, our Fish Health Inspectorate (FHI) and epidemiology teams have been working with Defra, the devolved administrations and stakeholders to facilitate its transposition into UK legislation. The new Directive introduces a risk-based approach to disease surveillance across a broad range of businesses and activities. This will ensure more efficient use of resources in protecting and raising standards of aquaculture health. Listed diseases will continue to be controlled by statutory means, but a greater role for government–industry partnerships is envisaged.

Non-destructive disease tests

The World Organisation for Animal Health (OiE) has added koi herpes virus (KHV) disease to the list of serious diseases, the occurrence of which must be reported. KHV was made notifiable in England and Wales in April 2007. This disease is widespread in ornamental koi carp and could become a threat to common carp stocks in the wild and in managed fisheries. The FHI is responsible for the statutory control of the disease, with industry support, through the development of codes of best practice. This is the first example of a government–industry partnership to control a fish disease.

Our Weymouth laboratory has been designated one of two global OiE reference laboratories for KHV. Defra and industry-funded research, to inform statutory controls into the distribution of KHV in England and Wales, has used nondestructive serological testing. This means that animals need no longer be killed for testing. This research will be used to establish the geographical distribution, and to identify risk factors for the introduction and spread of, the virus, thus improving surveillance programmes.





Guiding sanitary surveys

Bivalve shellfish (oysters, mussels, clams, etc) are vulnerable to contamination by sewage and agricultural effluents. Consequently, extensive hygiene monitoring programmes are necessary to ensure products placed on the market are safe to eat. Recent European food safety legislation (EC 854/2004) requires an extensive pollution assessment – a sanitary survey – to be performed for each production area.

Cefas, as the European Commission (EC) reference laboratory (see www.crlcefas.org), has been instrumental in drawing up European

Replacing animal testing

Potent neurotoxins produced by some marine algae – such as paralytic shellfish poisoning (PSP) toxins – can accumulate in filter-feeding shellfish. European legislation requires a comprehensive risk-based monitoring programme to contribute towards consumer safety. Cefas currently undertakes this monitoring on behalf of the FSA in production areas in England, Wales and Scotland. Since the 1960s PSP testing has relied on a robust and internationally recognised animal bioassay. However, this assay is subject to significant ethical objections. Both Cefas and the FSA are committed to adopting alternative testing methods. guidance for performing sanitary surveys. With funding from the Food Standards Agency (FSA) and the devolved administration in Scotland, we are tackling a comprehensive desk and field assessment of sanitary conditions in UK shellfish harvesting areas. The survey teams assess a range of data, identifying and cataloguing pollution sources as diverse as agricultural effluents, birds and septic tanks; analyse the potential impact on the shellfishery; and assist the FSA to communicate findings to stakeholders.

The FSA has funded a validation programme for the implementation of high-pressure liquid chromatography (HPLC), which is now authorised under EU legislation for PSP monitoring. We introduced an HPLC screen in October 2006, which protected the public and reduced animal use by about 75%. Further work is currently focused on validating and implementing a fully quantitative method to replace the animal assay for PSP analysis. These advances are of great interest internationally as the UK is at the forefront in delivering robust and ethically acceptable PSP monitoring.

It's a small world: molecular pathology

We are using laser capture micro-dissection to collect very small tissue samples (down to individual cells). This technique is being applied to a range of scientific studies, from the development of liver cancer to isolation of parasite genomes harvested from fish organs. We hope to identify the specific gene changes associated with very early cancer formation in fish, enabling direct comparisons with human liver cancers. Our unique sample set may also allow us to extrapolate our findings to other areas of science.



- Enophthalmia in carp (Cyprinus carpio), infected with KHV disease (left)
- Bivalve sanitary survey in the field
- Scientists using HPLC to detect the presence of PSP

Protecting the aquatic environment

The Environment and Ecosystems division has at its heart science provision for the protection of the aquatic environment. We generate practical, integrated solutions based on an ecosystem approach to the management of human activities and the sustainable use of UK waters. We aim to ensure that the nation can benefit from clean, healthy, safe, productive and biologically diverse seas.

We undertake a wide range of risk assessment and monitoring including supporting the UK Marine Monitoring and Assessment Strategy (UKMMAS). We use our knowledge of the behaviour of contaminants and the impact of human activities, and our developing understanding of the ways ecosystems function and respond to change, to provide advice to the public, industries and governments. We are currently providing customers with the means to respond to the challenges posed by a range of UK and European marine legislation.

Assessing marine resources

In 2007 the EC reached agreement on a Marine Strategy Directive, to apply to all European seas. This will have far-reaching implications for all Member States but especially for those such as the UK, with its responsibility for substantial areas of sea. The main obligation will be to ensure that the marine environment is managed to achieve or maintain "good environmental status" by 2020. This is major task because of competing marine activities.

For example, in December 2007 the Government announced plans for a major expansion of offshore wind farms in UK waters. This, in part, is a response to the EU target for 20% of UK energy to be from renewable sources by 2020. There are currently 0.75 gigawatts (1 gigawatt = 10⁹ watts) of offshore wind energy supplied or under construction in the UK, with a further 7.25 gigawatts planned in the current licensing rounds. Although there are clear environmental benefits to be gained from the expansion of renewable energy technologies, there are also a series of environmental impacts that can be associated with the construction and operation of these facilities.

Cefas is working with government and industry to provide robust environmental assessments to make maximum use of maritime resources without degrading the quality of our marine environment.



Symposium on environmental indicators

The symposium "Environmental Indicators: Utility in Meeting Regulatory Needs" was held in London in November 2007 (see http://envind2007.benthos.be/). Cefas had a strong presence on the scientific and steering committees, and provided the organising secretariat. Indicators are particularly important as organisations aim to present complex environmental information in an accessible way. Key points arising from the symposium included the need for:

- the correct blend of indicators (ecological and socio-economic)
- ecosystem-based management
- indicators to show thresholds beyond which management action is needed.

Cefas will adopt these points and develop a response to embrace clarity and a common approach.

Identifying marine climate change impacts

Climate change is one of the main threats to the UK marine environment. The Marine Climate Change Impacts Partnership (MCCIP) provides a framework for identifying and communicating evidence of climate change impacts, and Cefas provides its secretariat. One of the main outputs is the MCCIP Annual Report Card (see www.mccip.org.uk/arc). Key findings from the 2007–08 Report Card include:

2006 was the second warmest year in UK coastal waters since records began: seven

of the ten warmest winters have been in the past decade

- warmer winters have been strongly linked to reduced breeding success and survival in some seabird populations
- models predict fewer storms but there will be a greater number of more severe storms
- coastal erosion and flooding is expected to increase: currently it affects 17% of the UK coastline.

Predicting unusual cargo landings

On 13 January 2008 the vessel *Ice Prince*, travelling through the English Channel, reported that her cargo had shifted and she had begun to list severely. Salvors tried to take her in tow as she drifted towards the Dover Strait, but she took on water and sank 26 miles off Portland Bill. Her cargo was sawn timber, over 2,000 tonnes of which was on deck and consequently lost. Cefas has considerable experience modelling the movement of spilled oil and, since the *MSC Napoli* incident in 2007, cargo containers. In this case, the model was adapted to predict where the timber might come ashore. Our prediction was that the wood would reach land around Littlehampton, West Sussex, on the afternoon of 19 January, which proved correct.



- Wind turbines on Scroby Sands, off the Norfolk coast
- Puffin (Fratercula arctica) © John Pinnegar. Seabird populations may be affected by warmer winters
- Mountains of wood from the stricken *Ice Prince*, on the beach at Worthing, West Sussex © Worthing Herald

Managing natural resources

The Fisheries division provides advice on the status and management of UK and European fisheries. It also undertakes supporting biological research, and the likely effects of fishery management decisions on stocks and fishermen.

Our advice is based on monitoring, assessment and the modelling of marine fish and shellfish, salmonid, eel and freshwater stocks. In addition, we study the responses of these stocks to exploitation. We have a close working relationship with the fishing industry to ensure the effective delivery of outcomes. Increasingly, we see emerging opportunities linked to the socio-economic aspects of fisheries management. We continue to explore options for focused international growth through the provision of niche services in Europe and more widely.

Cod exhibit homing migrations

The lives of cod in the north-east Atlantic were described this year as the world's single largest electronic tagging programme on fish, the EUfunded CODYSSEY project, drew to a close after four years. Cefas co-ordinated the project, which confirmed that some cod prefer to remain resident in the same area all year round. However most cod, like many other large marine fish, can exhibit homing migrations between spawning grounds and feeding grounds.

The closure of the project was celebrated with the publication of a poster about cod that was distributed to fishermen and to fish and chip shops (see www.codyssey.co.uk).

"Clean Fishing" nets positive results

Cefas launched the "Clean Fishing" competition to encourage fishermen to propose and test new ways to reduce their catch of "discards" (unwanted fish). The competition was a practical way to harness fishermen's knowledge and skills for a positive outcome (see www.cefas.co.uk/publications/files/ Clean-Fishing-Competition-2007-Version2.pdf). After months of gear sea-trials, TV chef Rick Stein presented awards to three winning fishermen in May 2007. First-prize-winner Mike Sharp had significantly reduced discards on his beam trawler by fitting a square-mesh cod-end and two square-mesh exit windows to a standard beam trawl. The winning idea was featured in the Channel 4 TV series *River Cottage: Gone Fishing!*





Our gears reduce impacts

We continue to work with the fishing industry to develop new and modified fishing gears, which reduce the environmental impact of fishing. Reducing discards in commercial catches remains a high political priority for fisheries managers, both nationally and internationally. Cefas scientists have been pivotal and innovative in developing new ways to minimise discard levels. Our advances have produced 60–90% discard reductions in test fisheries. This good progress is set to continue as we embark on a new Defra-funded five-year collaborative research programme with the fishing industry (starting in April 2008).

Our internationally recognised work in this field was used directly by Defra during EU fisheries negotiations. It is also increasingly being used nationally and abroad to address wider concerns about the environmental impact of fishing, which are becoming a more prominent issue in the consumer and retail sectors, as well as for the general public.

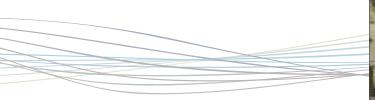
Links with fishermen inform advice

Established in 2003, the Fisheries Science Partnership (FSP: visit www.cefas.co.uk/FSP) has enhanced the links between fishermen and scientists, and further involved fishermen in the co-commissioning of science.

Four projects of five years' duration have yielded valuable time-series that are contributing to the International Council for the Exploration of the Sea's (ICES) stock assessment and advice. Cefas scientists hold pivotal roles within this international forum. Specifically, the data from the Western Channel plaice time-series project were used in a benchmark assessment that fed through to European scientists' advice on the stock, and ultimately to EU decisions on catch quotas.

Contributing to MSC certification

The Marine Stewardship Council (MSC) is an independent non-profit organisation that promotes responsible fishing practices. Fisheries are assessed against the MSC's criteria: healthy populations of targeted species; integrity of ecosystems; effective fisheries management systems; and compliance with relevant local, national and international laws and agreements. MSC accreditation allows companies to use the MSC logo on their products, enabling consumers to clearly identify sustainably exploited fish. Cefas scientists have acted as stock assessment and ecosystem specialists within several independent teams assessing candidate fisheries against the MSC environmental standards. This year we examined a diverse range of fishing operations for over eight fish stocks and several fishing fleets around the world. These included the Norwegian and German saithe fleets, South African hake trawl fisheries, and Pacific flatfish and cod fisheries off Alaska.



- Haul resulting from the use of a standard (diamond) trawl net
- Haul after a modified (square) trawl net was used. Discards were reduced significantly
- Cod (Gadus morhua)



Integrating projects, developing new products

Scientific monitoring strategy, and delivery of complex programmes across Cefas, is co-ordinated by the Monitoring and Programme Management division. It also provides bespoke services for a range of customers to enable them to achieve maximum benefits from their research and surveillance programmes.

Integrating marine monitoring

The UKMMAS is a Defra-led initiative with the aim of integrating all UK marine-monitoring programmes to meet national needs and international obligations. Cefas is at the vanguard of developing this strategy. We hosted the first UKMMAS workshop in September 2007 to bring together all the participants in the marine monitoring community. The workshop focused on debating future strategy and direction, the objectives of the programme and the outputs that are due to be published in 2010. We are already seeing practical outcomes and benefits from these activities. For the first time we are combining environmental and archaeological survey work under our "best uses" programme, which examines the way that acoustic and biological information is combined to serve the needs of biologists, geomorphologists and archaeologists. This work underpins the "collect once, use many times" principle embedded in the UKMMAS.

Aggregate funds for marine protection

The Marine Environmental Protection Fund, provided by the aggregate industry and administered by Cefas, published the findings of over £9 million of research related to marine aggregate dredging (see www.alsfmepf.org.uk/default.asp). *Marine aggregate extraction: Helping to determine good practice* was based on the proceedings of a two-day conference held in September 2006. Studies reviewing natural seabed resources, and those of archaeological and historical interest, are covered in the publication, as well as reports on the steps being taken to mitigate and manage those resources.





Securing EU research funds and influence

The EU team within our Programme Management group provides a centre of excellence to maximise Cefas and Defra's involvement in EU research programmes (Framework Programmes 6 and 7: FP6 and FP7). FP7 offers complementary ways of pursuing science that is useful to policy-makers and that places the UK at the heart of science in support of policy within the EU.

The EU team helped to secure over £4.7 million of research contracts from the first year of FP7.

The team was instrumental in securing an impressive 80% "threshold pass rate" for the 25 proposals submitted. In the face of stiff funding competition we were successful in securing the leadership of three major projects; and we are a partner in a further five projects.

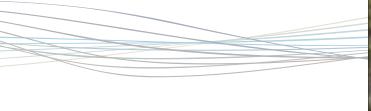
The team's efforts were rewarded by being shortlisted in the 2007 Defra Team Awards, in the "Best Team in Corporate Services" category.

IT solutions for streamlined consents

Cefas' IT developers have completed work on the flagship e-Consenting system for the EA. It allows dealers in farmed fish to apply for consents online: to import, export and move fish stocks. It is a "one stop shop" approach that supports the full process from registration through to EA approval of applications via the internet. Its intuitive and user-friendly design is already paying dividends, with a rapid uptake from the industry and a more streamlined, end-to-end process.

Data storage tags take flight

New and innovative features have been developed for our world-leading G5 data storage tag (DST) to address the demanding requirements of scientists studying animal behaviours. The latest generation tag – born out of fish-movement observations by Cefas scientists over the past 20 years – has opened the DST market to the avian scientific community because of its small size and weight. The tag is being used around the world on a variety of species such as penguins, auklets, little auk and murres. Specific features, such as dive profiling which allows scientists to accurately measure diving birds once submerged in water, have been added to tailor the product to this new market. The newest G5 tag provides for two million independent temperature and pressure readings. Other features under consideration include selfrelease mechanisms, light and other sensors, and lower-cost packaging options.



Collecting and deploying SmartBuoys, marine-monitoring devices, at sea

Sieving benthos – seabed organisms – during a survey
Cefas data storage tag on a little auk © Nina Karnovsky



Developing and promoting science

Cefas strives to develop the potential of the next generation of scientists and to recognise the innovation and achievements of those who already work with us.

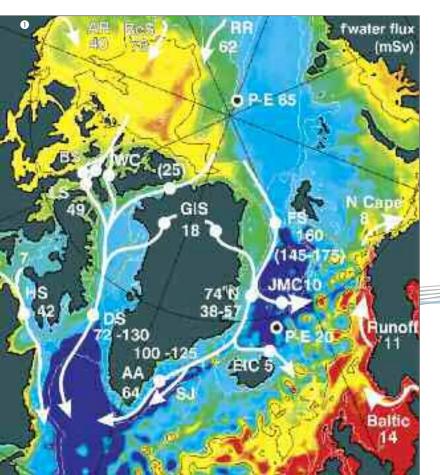
We currently support 28 PhD students, who are conducting research on topics that range from reconstructing the global movements of turtles, to pathogens in seafood. As well as developing their own scientific skills and supporting our commitment to science, the students help to keep our links with universities active and often come back to work with us in future years.

Our science Paper of the Year competition highlights the best Cefas science. It provides a reminder that science needs to be published, and recognises the authors' efforts to present their science in an interesting and accessible way. Throughout the calendar year a Paper of the Week is displayed on the intranet front page. At the end of the year the best papers from each of our divisions are selected as divisional Papers of the Year. This year Bob Dickson, Stephen Dye and colleagues' work on Arctic circulation patterns was judged the overall winning Paper of the Year. The other two leading divisional Papers of the Year are also displayed here.

Mapping the pathways of ocean currents

Bob Dickson, Bert Rudels, Stephen Dye, Michael Karcher, Jens Meincke and Igor Yashayaev

Warm, salty water from the North Atlantic cooled on its passage northward helps to warm the climate of north-western Europe. Once cooled, this, now denser, water sinks to return



south as a deep current completing the "Atlantic heat conveyor". For the sinking to take place, the cooling has to overcome the buoyant effect of freshwater added as the circulation passes through northern seas. As the world warms it is expected that freshwater outflows from the Arctic Ocean to the North Atlantic will strengthen, potentially slowing the conveyor if the sinking is weakened. Though observations remain patchy, this research pieced together results from recent large-scale observational programmes and associated modelling to establish preliminary maps of the rates and pathways of freshwater flux through subarctic seas. The analysis showed that freshwater leaving the Arctic increased steadily over recent decades. Projections suggest this will continue.

See "Current estimates of freshwater flux through Arctic and subarctic seas", in the journal *Progress in Oceanography*, 73: 210–230.

Estimates of freshwater flux in Arctic and subarctic seas. The base map is a snapshot of sea surface height from a model supplied by Wieslaw Maslowski

Beam trawler at sea © David Linkie

Stress measurements in farmed fish

Tim Ellis, Jonathan James, Henrik Sundh, Frode Fridell, Kristina Sundell and Alexander Scott

Measuring the hormone cortisol can assess stress in fish. Traditionally, measurements are taken from blood. However, at Cefas, following our discovery that fish release cortisol into the water through their gills, we developed a method for measuring hormone changes in fish that is totally non-invasive. This means that the fish do not have to be captured and bled. The pioneering work was performed on trout in freshwater. This paper describes the development and validation of the method for Atlantic salmon in seawater. We show that water cortisol levels accurately reflect blood cortisol levels, and discovered that when fish are diseased there is a huge surge in cortisol release. This discovery leads us to propose that water cortisol measurements could provide an early warning of disease outbreaks in farmed fish.

See "Non-invasive measurement of cortisol and melatonin in tanks stocked with seawater Atlantic salmon", in the journal *Aquaculture*, 272: 698–706.

Understanding trawling strategies

Jonathan Beecham and Georg Engelhard

Understanding why fishermen choose to fish where they do is remarkably difficult. This research asked how fishermen would exploit patchily distributed fish stocks that fluctuated through time. Conventional economic models assume that fishermen have a complete understanding of where all the fish are and can exploit them straight away. In reality, fishermen learn about their environment over a period of time and sample fishing grounds, moving on if catches are low. We created a computer model in which fishermen chose a set of rules about moving and fishing duration, and chose a new rule at random if their catch was less than a specified proportion of the fleet average. After a while, predicted patterns of fishing turn out to be similar to those predicted by models that assume complete knowledge. However, when resources vary rapidly over time, fishermen have to choose strategies that involve sampling and moving on if catches are low. The predictions were similar to the real behaviour shown in some fisheries and can be applied to describe how fishermen behave as fish stocks move and fluctuate in abundance.

See "Ideal free distribution or dynamic game? An agentbased simulation study of trawling strategies with varying information", in the journal *Physica A*, 384: 628–646.



Managing the agency

As an executive agency of Defra, Cefas is fully accountable to Parliament through ministers. The agency was created on 1 April 1997 from the former Directorate of Fisheries Research under the Next Steps programme.

Governance arrangements

Jonathan Shaw MP – the Minister for Marine, Landscape and Rural Affairs – has been empowered to act on behalf of Defra's Secretary of State on all ownership matters relating to Cefas. He sets annual performance targets for the agency, agrees the corporate and annual business plans, and nominates a Corporate Owner to discharge his ownership responsibilities. Through the Statement on Internal Control the Defra Management Board remain collectively responsible and are accountable to ministers for Cefas' delivery.

Cefas' Chief Executive and Accounting Officer is Dr Richard Judge. The Cefas Management Board (CMB) support his governance of the agency. Besides Cefas directors, the CMB comprises external non-executive advisory directors, and is advised by internal and external auditors. Governance arrangements

Our principal activities

Cefas works alongside government and other agencies, both in the UK and internationally, to play a vital role in securing healthy marine and freshwater environments for everyone's wellbeing, health and prosperity.

Our principal activities are to deliver an efficient service of specialist scientific and technical support, consultancy and advice in aquaculture, environmental protection and fisheries management. This work directly supports are described in more detail in the *Cefas Framework Document* and in the Statement on Internal Control.

The composition of the CMB was reviewed and revised in June 2007 to improve governance, clarity of accountabilities and efficiency, and to oversee operational management by a new senior management team (SMT).

Our Charter (see www.cefas.co.uk/about-us/ working-standards/cefas-charter) details the high service standards we provide. We are pleased that once again almost 100% of letters were responded to within 15 working days, and all visitors to our laboratories were met within ten minutes of their arrival. Three complaints were received during the report period, and these were addressed with the complainants to our mutual satisfaction.

delivery of the aquatic-related aspects of Defra's public-service-agreement targets and the application of our expertise maps closely to Defra's strategic objectives.

We also have a remit to exploit growing wider markets opportunities alongside our work for government. We are building the skills and infrastructure that underpin a sustainable future for Cefas.

Delivering the strategy for a secure future

We continue to deliver the strategy set out in response to Defra's Laboratory Strategy Review. This includes developing more effective and flexible ways of working that bring greater business orientation to our delivery, consolidating from three sites onto two, and building major new facilities.

During 2007–08 we restructured the agency and refreshed our vision, purpose and values. Three elements underpin that vision: our business, science and people. In everything we do we assess how these elements support our vision and help us to respond to change.

Restructured agency

Cefas has been organised into four marketfacing divisions, with "Corporate Centre" teams providing technical and administrative support.

The operational divisions are being given increasing autonomy and greater responsibility for income generation and all aspects of contract delivery. Supporting Defra through a strong, open and strategic partnership continues to be an important aspect of our activities, with mutual commitments reflected in a ten-year high-level agreement, signed in April 2007. The divisions also continue to strengthen relationships across the wider Defra network, have increased our competitively won non-Defra income, and secured major repeat commercial tenders – all of which enhance our capability. The new structure and revitalised customer focus are important aspects of our delivery strategy.

Relocation and new facilities

We continue to pursue ambitious initiatives to consolidate our business from three sites to two, and to build major new office and laboratory facilities at Lowestoft – the "Waveney Campus". These plans support our vision for strong and integrated interdisciplinary science across the agency.

The decision was taken to move the Burnham laboratory this year, ahead of our original plan. The relocation project is now well advanced, with current Burnham-based business transferring to Lowestoft by the end of October and final closure of the lab planned for December 2008. A major recruitment campaign, to replace staff not relocating, is underway to ensure smooth business continuity.

The Waveney Campus is fundamental to our future, providing state-of-the-art facilities. Land acquisition – secured by our project partner, Waveney District Council – and detailed design development were major project elements this year, in preparation for the procurement process. Completion of the Campus is currently planned for 2010–11. For more about the Campus see www.waveneycampus.co.uk.



Our vision and targets

Our vision is to make a real difference for society as recognised leaders in marine and aquatic science. This is a timeless goal. It reflects our rich heritage and the great pride we take in the positive impact for society that we deliver through the application of our world-class science. We do this through the contribution that all our staff – both scientific and non-scientific – bring to making this vision a reality.

Our markets and customers are changing markedly and rapidly. In delivering our vision and ensuring a sustainable future, we must respond and continually evolve to adapt to a dynamic external world. To deliver our aspirations, we are focusing on three interdependent actions:

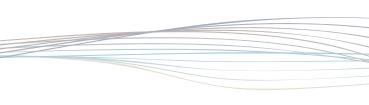
- creating a vibrant, influential business that is valued and trusted as a strategic partner
- fostering expertise and integrating interdisciplinary science and technology to deliver sustainable outcomes

 attracting, developing and enthusing exceptional people.

Aligned to our vision are the Cefas business plan and associated performance targets set by our Minister. These support delivery of the aquatic-related aspects of Defra's publicservice-agreement targets and departmental strategic objectives. They are reviewed annually to ensure they continue to be relevant to the agency. They are announced in the House of Commons and audited by Defra at the end of each financial year.







Marine and Fisheries Minister, Jonathan Shaw MP, is greeted by Cefas' Dr Lindsay Murray at Defra's Marine Day event, March 2008

2 Extracting marine biotoxins in the lab

Performance against ministerial targets

1. Delivery of outp	uts	
	on time, within budget and to agreed standards of quality; importance weighting: 30%	
2005–06	Target achieved	
2006–07	Target achieved	
2007–08	Target: Overall delivery of milestones to exceed 90%. Data on delivery against milestones is taken from the contracts management database, and performance is reported on as a proportion of agreed outputs weighted by value of contracts.	
	Outturn: Target achieved – 99%	
2. Customer focus		
To provide a high stand	dard of services to the satisfaction of customers; importance weighting: 20%	
2005–06	Target achieved	
2006–07	Target achieved	
2007–08	Target: Overall customer satisfaction survey score to exceed 82%.	
	Outturn: Target achieved – The weighted average score, based on eight aspects of service quality, exceeded 83%. The overall average unweighted score was 84%.127 responses to the customer satisfaction survey were received, representing 64% of the target Cefas project base and 59% by value of the operational programme.	
3. Strong science		
To enhance scientific c	apability and reputation; importance weighting: 20%	
2005–06	Target achieved	
2006–07	Target achieved	
2007–08	Target: To achieve a high standard of excellence based on indicators of scientific and technical quality, with an overall score to exceed 75%. Indicators are grouped around research, wider dissemination and use of our science, and our scientific capability. Measures include customer satisfaction survey returns, number of peer-reviewed scientific papers and investment in new science.	
	Outturn: Target achieved – 91%	
4. Financial		
To recover the full cost weighting: 10%	t of services, invest for the future and deliver the transformation plan; importance	
2005–06	Target achieved	
2006–07	Target achieved	
2007–08	Target: To achieve an annual target for net deficit set under the LSP: £0.2 million.	
	Outturn: Target fully achieved	
5. Efficient, cost-ef	fective operation	
	e, reliable and effective processes; importance weighting: 10%	
2005–06	Target achieved	
2006–07	Target achieved	
2007–08	Target: To achieve agreed Gershon Efficiency Plan savings of 2.5%. Data is taken from the quarterly monitoring of progress against Cefas' efficiency plan.	
	Outturn: Target achieved	
6. Investment in p	eople	
-	e agency's people to develop; importance weighting: 10%	
2005–06	Target achieved	
2005-00	Target achieved	
2007–08	Target: Overall annual staff survey satisfaction score to exceed 63%. Measured by an annual questionnaire to staff, using a weighted scale for the eight survey categories.	
	Outturn: Target achieved – 65.78%	

Sustainability at the core

Cefas is committed to supporting Defra's departmental strategic objectives, which reflect the need to deliver economic, social and environmental sustainability.

Our Sustainable Development Action Plan (SDAP) and related progress report are available online at www.cefas.co.uk/about-us/workingstandards/sustainable-development-action-plan. aspx. The SDAP prioritises actions where delivery will have the greatest impact. In addition, maintaining certification to ISO14001 supports the SDAP and demonstrates Cefas' commitment to reducing our environmental footprint.

Our science promotes sustainability

The essence of our work is to promote sustainability, with its focus on natural resource protection, environmental enhancement, climate change and energy. A few examples of how our science positively supports this objective include:

- the trialling of new fishing gears that reduce discards and improve cod recovery
- providing evidence for the MCCIP Annual Report Card
- input to improve KHV disease-surveillance programmes.

Improving our operations

We are working towards the Building Research Establishment Environmental Assessment Method (BREEAM: see www.breeam.org) "excellent" specification for the Waveney Campus, which will significantly improve our environmental performance. In the meantime, we will continue to monitor our progress towards meeting environmental targets for our day-to-day operations.

Environmental management targets

	1999–2000	2006–07	2007–08 (estimated)	Target
Total carbon emissions (tonnes)	887	816	827	776
Percentage below 1999–2000 levels	_	8%	7%	12.5% by 2010–11 relative to 1999–2000
Tonnes per £1 million turnover	31.3	18.8	17.6	
Percentage of electricity from renewable sources	-	15%	16%	10% by March 2008
Percentage of recycling	_	46%	44%	40% of waste arising by 2010

Science Student Partner Luke Shilling receives congratulations from Chief Executive Richard Judge

The winners of Cefas' "Clean Fishing" competition receive their prizes from chef Rick Stein © Ian Brooke

Our community involvement

Now in its fourth year, our Science Student Partnership provides mentoring for two sixthform science students working alongside Cefas scientists. Developing scientific skills is also pursued through the Marine Environment Protection Fund, where four MSc degrees are due for completion in June 2008.

Seven 14- to 15-year-olds participated in "Project Trident" at our Burnham laboratory. The work there provided them with the opportunity to develop a range of life and scientific skills. Our Weymouth laboratory continues its affiliation with the "Abilities" project, a continuous work-placement programme for those experiencing difficulty returning to work.

Several well-known charity events, for example the "World's Biggest Coffee Morning" (Macmillan Cancer Support) and the "Race for Life" (Cancer Research UK), were also the focus of staff generosity and enthusiasm this year.

Media coverage improves our profile

We consolidated media relations with key specialist publications and science correspondents across a range of broadcast and print media: from the BBC's news and Radio 4 programmes to the *Observer*, *Telegraph*, the *Sunday Times*, the *Eastern Daily Press* and other regional newspapers.

Our public relations work for the "Clean Fishing" competition, involving chef Rick Stein, received widespread coverage in print and on Channel 4. Our support for the MCCIP Annual Report Card led to global coverage from as far away as Korea. Fisheries stock assessments and modified gear trials were reported on throughout the year, including coverage on ITV programmes such as *Tonight with Trevor MacDonald*.

Other stories attracting coverage included: successful anti-smuggling operations, spearheaded by the FHI team; ocean fertilisation; a debate about biodiversity; and the effects of climate change on fish stocks.



Valuing our people

We are committed to building and developing a diverse and enthusiastic workforce. In addition, wider staff involvement on a number of corporate projects and better use of consultation opportunities has meant that our people are engaged more actively than ever before.

Opportunities available for all

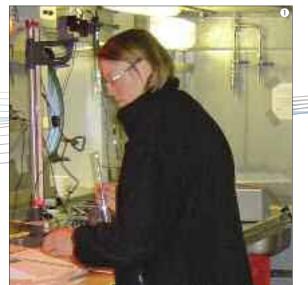
We have actively applied our equality and diversity policies but recognise that policies alone will not deliver a better balance at senior levels. A presentation to the CMB resulted in the decision to establish a "Women in Cefas" group to act as a primary contact point for women-related issues and to help to spread best practice and highlight opportunities within the agency.

Our flexible working arrangements have helped more than 90% of mothers employed by Cefas to return to work at the agency, and there are plans to broaden these arrangements in the coming year. In addition, Cefas follows the civil service Code of Practice on the Employment of Disabled People. We recruit, train and provide career development for all staff on the same basis, and make every effort to retrain and assist individuals disabled in the course of their Cefas employment.

An "attraction" advertisement campaign and the "Careers @ Cefas" website (see www.cefas.jobs) are being used to help us to fill some 50 vacant posts – in a variety of disciplines – which have become available due to laboratory relocations and growth in new areas.

Professional development

We continue to support the Professional Skills for Government initiative to ensure our staff have the appropriate skills and expertise to deliver effective services. Leadership is a mandatory competency for all senior staff and the now well-embedded BTEC Practical Management and Leadership qualification has provided 60 staff with opportunities to further their capabilities in the "management of change". In support of our re-alignment at



senior management level, a leadership development programme will be rolled out in 2008. This will ensure that Cefas leaders, at individual and team levels, can effectively steer us through the challenging period ahead.

In addition to internal development programmes, we also actively encourage experience outside Cefas, with increasing numbers of staff taking up secondment opportunities.



Active employee involvement

The Committee on Staff Matters is well supported by active focus groups, enabling two-way input. Single-issue workshops also gave staff the chance to provide input on key topical issues, for example on our vision, purpose and values statements, and on our management information systems. An action plan was developed and

implemented this year as a result of the annual staff survey, to prioritise and address the main staff concerns. A new mid-year "health check" survey showed some progress during the year.

Improving health and safety

We have invested in our health and safety (H&S) procedures this year as part of our continuous improvement goals and in response to two reportable incidents, which highlighted deficiencies in our safety management systems. Changes include strengthened key performance indicators and renewed focus on our procedures for reporting and evaluating "near miss" events.

Additional targets and objectives, resulting from the introduction of corporate and local group plans, have also been set. For example, we introduced a "safe driving" initiative that acknowledges the risks inherent to those who drive between our sites or while delivering their duties, and provides them with appropriate training. We have improved our operations, and an enhanced work programme has delivered the following outcomes:

- increased health surveillance for staff who work with hazardous chemicals
- significantly improved housekeeping practices in our laboratories
- better training for our staff and managers
- sharing good practice across our business
- a strong H&S culture staff are directly involved and building upon local plans.



- Female Scientist in Charge at work in one of the labs onboard the RV Cefas Endeavour
- Pront page of the "Careers @ Cefas" website
- A successful participant of our "safe driving" initiative shows off her certificate

Financial performance

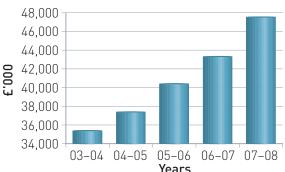
Cefas has delivered a year of strong business growth. We have worked on more than 500 customer projects in the year while continuing to invest significantly in a transformation plan to secure a sustainable future for the agency. We have also met the key ministerial targets set for financial performance and efficiency for the year ended 31 March 2008.

As an agency under the net accounting regime we have a continuing requirement to recover the full economic cost of the services Cefas provides. This was achieved and the overall net surplus of £35,000 (2006-07: £176,000) generated a total cost-recovery of 100%, which falls within the tolerances allowed and is an improvement on a budgeted break-even position. This surplus is after a one-off charge of £2,959,000, which arose from the continuing work to relocate the Lowestoft and Burnhamon-Crouch laboratories to a new site within Lowestoft. These costs included relocation and severance payments accrued primarily to Burnham-on-Crouch staff of £1,801,000; refurbishment costs to accommodate Burnham-on-Crouch work temporarily in the existing Lowestoft laboratory of £118,000; and further building impairment charges of £611,000 on the sites to be vacated.

Cefas was required to meet the Gershon efficiency target of a 2.5% reduction in annual costs. This was exceeded, with reductions of 10.3% (2006–07: 6%) being achieved against the baselines. Close control over administrative support costs saw an average reduction of 21 corporate staff, whereas turnover has risen by 10%. We now believe that our administrative efficiency levels benchmark well externally and no further programmed reductions are planned. This marks a significant achievement: the completion of all our actions necessary to deliver the Laboratory Strategy Programme (LSP) efficiency plan a year ahead of schedule. This has reduced our administrative costs by more than 20% over the past two years.

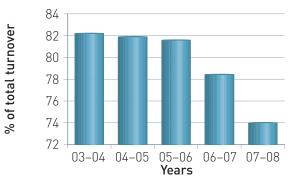
Turnover for the year was £47,557,000, a 10% increase on 2006–07 (£43,342,000). This strong, top-line growth is inflated by an increase in our programme management and integrated project business. We co-ordinate programmes engaging many collaborators and contributors for such projects. We then integrate the results as required for the customer. This means sizable sums pass through Cefas to subcontractors.

Turnover trend





Turnover from Defra of £35,375,000 (2006–07: £34,102,000) accounted for 74% of our work (2006–07: 79%). Most of this is provided through the ten-year high-level agreement, signed in April 2007, which provides a commitment from Defra to Cefas of work to be commissioned through to 2016–17.



Defra turnover

The proportion of non-Defra turnover is above that planned within the LSP because of lower levels of Defra work and greater success in wider markets. This has now increased to 26% (2006–07: 21%).

Of this, £6,203,000 of turnover (2006–07: £5,590,000) came from other UK government departments and agencies, where a continuation of the growth in the services Cefas supplies to the FSA was achieved. The FSA is Cefas' second largest customer, providing £4,493,000 of turnover (2006–07: £3,496,000). Significant growth in commercialsector work saw turnover rise to £3,247,000 (2006–07: £876,000), including success with energy-sector customers that is expected to continue to grow next year. The remaining £2,732,000 of turnover came from EU research work and foreign governments. Cefas was again subjected to significant cost pressures in the year. However despite this, we held typical price increases to customers at around 3% owing to productivity and cost savings. The most material increase in 2007–08 was staff pay, where the third year in a threeyear pay agreement was delivered through a pay-progression arrangement, providing an average annual increase of 3.9% to staff. Additionally, the steep increases in utility prices, including fuel for our research vessel, saw increases of more than 50%, increasing our year-on-year costs by £160,000.

Estate-maintenance costs continue to be a concern at the Lowestoft and Burnham-on-Crouch laboratories, where matters that do not affect health and safety are repaired as required rather than through pre-emptive maintenance. This can lead to unplanned costs, although these were within annual budgets for the year.

There were also unbudgeted costs incurred during the year: to enhance our health and safety procedures, in reviewing and specifying a new management information system (to be procured in the next financial year), and for leadership training. These costs exceeded £300,000 in the year. These were affordable because of the strong growth in non-Defra work.

There were no charitable donations greater than £200 made in the year (2006–07: Nil).



Pension liabilities and entitlements

Pension liabilities arising from early retirement or other enhancements are accrued in total in the year in which the liability arises. Pension benefits are provided through the civil service pension arrangements. From 1 October 2002, civil servants may join one of three statutorybased "final salary" defined-benefit schemes (Classic, Premium, or Classic Plus). New entrants arriving after October 2002 may choose between membership of the Premium scheme or joining a good-quality, "money purchase", stakeholder-based arrangement with a significant employer contribution (the Partnership Pension Account). Further details are provided in Note 4(c) to the Accounts.

Assets

Underlying capital charges relating to land, buildings and our research vessel rose in the year owing to the indexed increase in their values. However, the Lowestoft and Burnhamon-Crouch laboratories are not inflated. Being held for resale, they have been valued at March 2008. The weaker commercial property market and the government commitment to increasing the social content of redeveloped sites have increased our impairment on these sites by £611,000 in the year.

Capital investment in the business of £1,195,000 (2006–07: £1,575,000) was principally incurred on scientific equipment, £891,000 (2006–07: £1,170,000), which is

typically replaced at a rate close to that depreciated to maintain the asset base. Other additions included IT equipment and enhancements to laboratory facilities.

Cefas acquired 100% of the share capital of Cefas Technology Limited (CTL) in 2001. CTL specialises in the exploitation of Cefasgenerated intellectual property. Examples include electronic fish-tag production and fishdisease testing. In line with our accounting policy, CTL accounts are not consolidated into Cefas' statements of accounts. In 2007–08, CTL traded profitably, making £66,000 after tax on turnover of £660,000.

Post-Balance-Sheet events

These accounts were authorised for issue by the Cefas Accounting Officer on 21 May 2008, and there are no known post-Balance-Sheet events to be reflected in the financial statements or to disclose up to this date.





Cash management

The business generated a positive operating cash flow of £8,472,000 (2006–07: £7,666,000) primarily because of the notional nature of depreciation, capital-charge interest and changes in working-capital management.

Working capital has been reduced again in the year, generating £235,000 of cash. An increase in debtors at the year-end reflects the expansion of our non-Defra business while the increase in creditors is similarly attributed to the increased use of specialist contractors to support this growth. Working capital is expected to increase in the future as our non-Defra business expands and we maintain our

Financial risk

The primary financial instrument risk that Cefas is exposed to is the receipt of payments from customers – 97% in pounds sterling and 3% in foreign currencies; and the payments of certain goods and services in foreign currencies. This risk is believed to be of a low level, and the policy is to accept net currency conversion risk of euros and US dollars or closely linked currencies. We manage our own collections risk and reduce our exposure to foreign currencies by netting receipts and payments in the same currencies before translating any remaining funds to pounds sterling. policy of prompt payment of suppliers (that is, within 30 days). Performance against this payment target during the year, of supplier invoices paid within the policy timeframe, was 92% (2006–07: 93%).

Having reviewed the cash requirements of the agency with Defra, we have repaid £5,187,000 (2006–07: £5,000,000) to them, which reduces the General Fund reserve balance between ourselves. This leaves Cefas in a sound cash position with sufficient liquid funds and customer contracts to meet all our expected obligations within the coming financial year.

Waveney District Council, as the future landlord of the Waveney Campus facility, has incurred costs relating to Cefas' involvement in the joint project of £1,289,000 as at 31 March 2008. If the project does not proceed to provide a facility that Cefas contracts from Waveney District Council, these costs will be charged to Cefas. The level of this balance will continue to rise until a contract is signed between the partners to provide the facility from landlord to occupier.

Auditors

Our external auditors are the National Audit Office, whose address is:

The Comptroller and Auditor General National Audit Office 151 Buckingham Palace Road Victoria, London SW1W 9SS The cost of work performed by the external auditors is £38,000. There were no costs for non-audit work.



2 A grab sampler being used at sea

Artist's impression of the Waveney Campus



2017-18 turnover (%)

Future plans

We are continuing to deliver the strategy set out in response to Defra's Laboratory Strategy Review. This includes consolidating from three sites to two, building major new facilities at Lowestoft, and developing more effective and flexible ways of working that bring greater business orientation to our delivery. Supporting Defra through a strong, open and strategic

Our proposed ministerial targets reflect the considerable challenge of sustaining current

Ensuring that our staff are fully engaged with

this change is important. We have therefore

the staff survey.

increased the Cefas capability target linked to

levels of performance through the major changes that we will deliver in 2008–09.

partnership will continue to be an important aspect of our activities, with mutual commitments reflected in the 2007 high-level agreement. We also focus on growing income from sources other than core Defra, to enhance our capability and to mitigate flat Defra funding (a decrease in real terms).

Defra

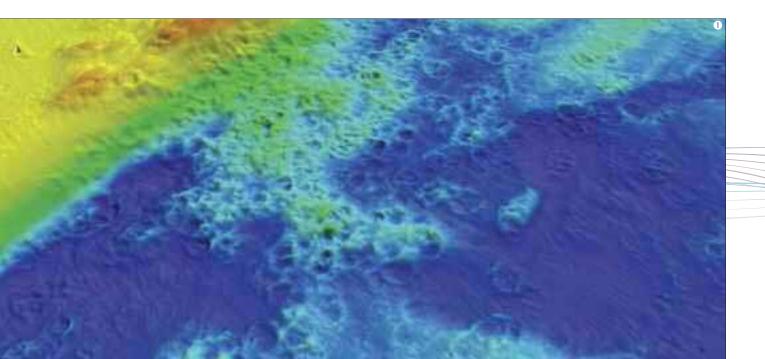
55%



2007-08 turnover (%)

We aim to break-even in 2008–09 and in subsequent years of our plans. This is in line with the original LSP projections, re-phased to reflect the accelerated relocation from Burnham-on-Crouch.

The business plan is subject to significantly greater risk than usual operating levels. This is principally due to the planned delivery of significant transformation.



Remuneration report

The Cabinet Office, subject to HM Treasury remits, sets the remuneration of the Chief Executive and Deputy Chief Executive. They are senior civil servants and their contract of employment is with Defra. Cefas, however, bears the cost of their employment. Up to 15% of their remuneration is performance-related and is reviewed against ministerial targets.

The Chief Executive, subject to HM Treasury remits, sets the remuneration of all other CMB members. The executive members are directly employed as civil servants. Up to 9% of their remuneration is determined by the Cefas performance-related pay scheme, which is subject to the attainment of set objectives as determined by the Chief Executive.

As part of the restructure of the CMB, Joe Horwood was asked to operate in a nonexecutive advisory capacity. Whilst he remains directly employed by Cefas, his internal role was changed to Chief Scientist. This is an advisory role and has no executive accountabilities or authorities. Given this, it was felt that his extensive scientific experience and understanding of the wider Cefas context added considerable value to the non-executive director advisory function.

The remaining non-executive members are employed on a call-off basis, with their remuneration being based on a daily rate and the reimbursement of expenses.

All executive directors and one non-executive member are under permanent contracts of employment with Cefas. There is a maximum notice period of six months from Cefas and a minimum of three months from the employee. The length of service, salary and age of the employee determine any termination payments payable. Non-executive directors, with the exception of Joe Horwood, have no contractual notice period costs payable or compensation payments on termination. No awards for early termination were made to existing or former directors in the year.



- Underwater image of dredged material disposal site, east of the Isle of Wight. The doughnut-shaped features are dredged material deposited on the seabed
- Sanitary survey work
- 3 A fish health inspector carrying out work in the field



Remuneration of Cefas' most senior managers (audited)

	Salary for period		Performance bonus		Total remuneration	
CMB member	2007–08 £′000	2006–07 £'000	2007–08 £'000	2006–07 £′000	2007–08 £'000	2006–07 £'000
Chief Executive Richard Judge	110–115	10–15 ¹	0	0	110–115	10–15
Operations Director Mike Waldock	60–65	55–60	0–5	0–5	65–70	60–65
Finance and Corporate Resource Director Tim Green	60–65	50–55	0–5	0–5	60–65	55–60
<i>To 1 June 2007</i> Programme Director Alex Kerr ²	15–20	35–40	0	0	15–20	35–40
<i>To 12 June 2007³</i> Deputy Chief Executive Joe Horwood ⁴) 10–15	70–75	0	5–10	10–15	75–80
Science Director Stephen Malcolm	10–15	50–55	0–5	0–5	10–15	50–55
Commercial Director Brian Robinson	10–15	60–65	5–10	0–5	15–20	65–70
Director of Staff Development Diane Carter	10–15	40–45	0–5	0–5	10–15	40–45

Salaries include gross salaries, performance pay or bonuses, overtime, reserved rights to London weighting or London allowances, recruitment and retention allowances, private-office allowances and any other allowance to the extent that it is subject to UK taxation. No CMB members were in receipt of any benefits in kind (2006-07: Nil); nor did they hold any company directorships or other significant interests that may have conflicted with their management responsibilities.

	Fee band			rmance onus	Total remuneration	
CMB non-executive directors	2007–08 £′000	2006–07 £′000	2007–08 £′000	2006–07 £′000	2007–08 £′000	2006–07 £′000
Hugh Walker	5–10	5–10	0	0	5–10	5–10
Alex Tweedie	5–10	15–20	0	0	5–10	15–20
Andrew Robinson⁵	0	0	0	0	0	0
Joe Horwood ⁴ (from 13 June 2007)	0	0	0	0	0	0

- 1 Richard Judge joined Cefas on 5 March 2007. His salary band for 2006–07 reflects his employment during the period 5–31 March 2007.
- 2 As from 1 June 2007 Alex Kerr was no longer employed by Cefas.

 The individuals following this note are still employed by Cefas.
The individuals following this note are still employed by Cefas but as from 12 June 2007 they were no longer members of the CMB. Salary and pension details for these individuals up to 12 June 2007 are indicated here.
Joe Horwood became a non-executive director on 13 June 2007. He remains employed by Cefas as Chief Scientist in an advisory role but without executive responsibility and is therefore no longer an executive member of the CMB. His salary during 2007–08 in this advisory role was in the band £60–65,000 with a performance bonus in the range $\pm 10-15,000$.

5 Andrew Robinson is employed by Defra, and therefore is not in receipt of any fees. From 1 April 2008 he was no longer a non-executive director. 6 CETV: cash equivalent transfer value.

Pension entitlements of Cefas' most senior managers (audited)

	Real increase in pension and related lump sum at age 60	Total accrued pension and related lump sum at age 60	CETV ⁶ at 2007–08	CETV at 2006–07	Real increase in CETV
CMB member	£'000	£'000	£′000	£′000	£′000
Chief Executive					
Richard Judge	30–35 plus 0–2.5 lump sum	30–35 plus 0–2.5 lump sum	486	6	202
Operations Director					
Mike Waldock	0–2.5 plus 0–2.5 lump sum	20–25 plus 60–65 lump sum	454	387	12
Finance and Corporate					
Resource Director Tim Green	0–2.5 plus 0–2.5 lump sum	0–2.5 plus 0–2.5 lump sum	29	15	9
To 1 June 2007					
Programme Director					
Alex Kerr ²	0–2.5 plus 0–2.5 lump sum	5–10 plus 20–25 lump sum	489	528	(1)
To 12 June 2007 ³					
Deputy Chief Executive					
Joe Horwood ⁴	0–2.5 plus 2.5–5 lump sum	35–40 plus 115–120 lump sum	957	816	35
Science Director					
Stephen Malcolm	0–2.5 plus 0–2.5 lump sum	15–20 plus 55–60 lump sum	337	349	3
Commercial Director					
Brian Robinson	0–2.5 plus 0–2.5 lump sum	20–25 plus 70–75 lump sum	438	469	2
Director of Staff Developmen					
Diane Carter	0–2.5 plus 0–2.5 lump sum	10–15 plus 25–30 lump sum	190	201	2

As far as I, the Accounting Officer, am aware, there is no relevant information of which the auditors are unaware. I have taken all the steps that ought to have been taken to make myself aware of any relevant audit information, and to establish that the our auditors are aware of that information.

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Richard Judge, Chief Executive 21 May 2008

Statement of Accounting Officer's responsibilities

Under the Government Resources and Accounts Act 2000, HM Treasury has directed Cefas to prepare, for each financial year, accounts on an accruals basis that must give a true and fair view of the state of affairs of Cefas as at 31 March and of its net surplus/deficit, recognised gains and losses and cash flows for the financial year.

In preparing the accounts, 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 HM Treasury, including the relevant accounting and disclosure requirements, and apply suitable accounting policies on a consistent basis
- make judgments and estimates on a reasonable basis

- state whether applicable accounting standards as set out in the *Government Financial Reporting Manual* have been followed, and disclose and explain any material departures in the accounts and
- prepare the accounts on a going concern basis.

HM Treasury has appointed the Chief Executive as Accounting Officer of Cefas. 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 proper records and for safeguarding Cefas' assets, are set out in the Accounting Officers' Memorandum issued by HM Treasury and published in *Managing Public Money*.

Statement on Internal Control

Scope of responsibility

As Accounting Officer, I have responsibility for maintaining a sound system of internal control, which supports the achievement of Cefas' policies, aims and objectives that are set by the department's ministers. This must be achieved whilst safeguarding the public funds and departmental assets for which I am personally responsible, in accordance with the responsibilities assigned to me in *Managing Public Money*.

I ensure that the Defra Permanent Secretary, the principal Accounting Officer for the department, is aware of the main risks managed by the agency through regular reporting of the top risks. Additionally:

- the agency's business plans that are submitted to, and approved by, ministers include sections on risk
- I am responsible for the timely production of data required by Defra for in-year monitoring of its accounts. I ensure that Cefas observes any general guidance issued by HM Treasury or the Cabinet Office, and effects any recommendations of the Public Accounts Committee (PAC), other parliamentary Select Committees or other parliamentary authority insofar as Government accepts them.

The purpose of the system of internal control

I am responsible for commissioning the internal audit and management inspection services required to ensure the proper and efficient conduct of Cefas' affairs and to discharge my responsibilities. These services comply with the objectives, standards and practices laid down by HM Treasury.

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 Cefas 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 for the year ended 31 March 2008 and up to the date of approval of the *Annual Report and Accounts*, and accords with HM Treasury guidance.

Capacity to handle risk

As Chief Executive I am advised by the Cefas Management Board (CMB): the top level of management within the agency. The CMB supports me in delivering my responsibilities for providing overall direction and governance of Cefas' activities and managing risk. It provides a forum for planning strategy, setting policies, reviewing performance and making decisions that affect Cefas as a whole.

The CMB membership balances executive and non-executive directors. It includes myself, plus:

Mike Waldock – Operations Director Tim Green – Finance and Corporate Resource Director

Joe Horwood – Non-executive Advisory Director (Cefas, Science)

Andrew Robinson – Non-executive Advisory Director (Defra)

Hugh Walker – Non-executive Advisory Director (external)

Alex Tweedie – Non-executive Advisory Director (external)

The CMB's principal functions are to:

- determine Cefas' strategy (taking account of government needs and broader market dynamics), allocating resources accordingly and monitoring progress against strategy
- ensure effective corporate governance and manage business risks
- ensure continued growth in capability

Capacity to handle risk (continued)

- ensure appropriate external focus and the context within which Cefas operates
- reinforce cultural change and Cefas' values through its own behaviour
- advise the Chief Executive
- approve Cefas policy on strategic matters at the discretion of the Chief Executive.

The CMB achieves its objectives through bimonthly board meetings and planning meetings for the executive, delegation to a series of committees and working groups, and close interaction with Cefas Divisional Directors. The Board is presented with monthly financial and management information designed to monitor performance and manage risk. Papers presented in a standard format support decisions. The CMB actively communicates its activities and decisions to all Cefas staff.

The Audit and Risk Committee (A&RC) is an entirely external, non-executive subcommittee of the CMB, constituted to give advice on the adequacy of internal and external audit arrangements, and on the implications of the assurances provided in respect of internal control and risk management.

This year the management of Cefas has been reorganised to make a clear distinction between strategic management by the CMB and operational management that is delivered through a new divisional structure. The senior management team (SMT) provides an operational overview of day-to-day issues, and comprises the CMB executive members, Divisional Directors, the HR Director and the Marketing and Sales Manager. The SMT meets monthly and covers a range of operational issues, including the review of a monthly performance and forecast pack. Divisional Directors carry responsibility for specific activities within their areas of operation, and report through the Operations Director to the CMB. Within the "Corporate Centre", individual managers are responsible for specific areas of operation (for example finance, commercial risks, governance, HR) and report through either the Finance and Corporate Resource Director or the Chief Executive to the CMB.

New staff are introduced to the system of internal control as part of a formal induction process. Further staff guidance is available in the Cefas risk management plan, provided on the local intranet and referred to in the Staff Handbook. Risk assessment is a requirement of the standard contract-tendering procedure to manage the risk inherent in this activity. Training for project managers includes advice on risk management. Cefas staff take advantage of the sharing of best practice provided by Defra and by local risk and project reviews.

Risk-management processes

The top strategic risk priorities currently described in the Cefas risk register, together with mitigating actions, concern: impact of the new Marine Management Organisation; relocation risk; health and safety management; and the maintenance of people with the key skills to manage business continuity and deliver organisational development.

The main processes we have in place for identifying, evaluating and managing risk are:

- regular risk reviews undertaken by the CMB to identify, evaluate and update the risks facing Cefas. The Board sets the priorities for risk in key business areas by prioritising and delegating specific activity and requiring feedback as necessary before authorising consequent actions.
- a documented risk-management plan
- a register of top Cefas risks assigned to and managed by individual managers and considered at each CMB meeting

- risk management plans by Divisional Directors and Corporate Centre Group Managers
- written statements from managers on the steps they are taking to manage risk in their areas of responsibility
- discussion at meetings in all levels of Cefas management
- a system of internal control based on a framework of regular management information, administrative procedures, management supervision and a system of delegation and accountability
- documented risk assessment procedures in support of tender activity for new business
- reporting Cefas' top risks to Defra for inclusion in the department's risk register.

Our management of risk is embedded in policymaking, planning and delivery by:

- an appointed risk co-ordinator who meets all members of senior management individually to discuss and embed risk management
- managers who promote risk management at team meetings
- corporate risk-management documentation that is available to staff via an intranet site

Communicating corporate values

Corporate values have been developed in consultation with staff. Policies are communicated by notices to staff on a dedicated corporate intranet site as well as regular briefings for staff by directors and myself. The Committee on Staff Matters communicates with all staff (union and non-union) in compliance with Information and Consultation of Employees Regulations.

Strategy and planning

Cefas strategy is designed to align with Defra's requirements of the agency as customer and sponsor. The CMB works through me to understand the Defra ownership and customer requirements and respond to them appropriately. At other levels, planning and resourcing is set to meet the customer's requirement and commitment.

Strategic issues are identified by the CMB in consultation with management. Depending upon scale, the directors are then responsible for identifying and evaluating strategic options and

Change management

To achieve longer-term business sustainability, Cefas has implemented a transformation programme designed to prioritise and manage the associated enabling projects systematically, including reporting progress to the CMB.

The CMB sets in place change-management processes to match the agency's culture

Review of effectiveness

As Accounting Officer, I also have responsibility for reviewing the effectiveness of the system on internal control. My review of the effectiveness of the system on internal control is informed by the work of the internal auditors and the executive managers within the agency, who have

- embedding risk management in mandatory business-planning and tendering procedures
- the induction course for new entrants, which includes a section on risk management
- the operation of both a whistle-blowing and an anti-fraud policy, including an annual written declaration by senior managers.

Communication and consultation with staff is made via numerous communication channels ranging from senior management "road shows" and team briefings to written/electronic notices.

Dedicated customer relationship managers manage consultation and communication with customers.

presenting them to the CMB for decision-making. Analytical techniques include risk-management and HM Treasury financial-appraisal methodology. Specialist advice is contracted from time to time to supplement internal expertise. As appropriate, uncertainty is managed by a risk review or assessment in Cefas' monthly performance report.

I agree prioritisation and ownership of objectives and targets with my directors, which are cascaded through management and tracked against their own personal objectives.

with strategic need. A training strategy, including Professional Skills for Government training, is designed to develop competences to manage change efficiently.

Change is embedded using communication, training and, where appropriate, through the appraisal and reward system.

responsibility for the development and maintenance of the internal control framework, and by comments made by the external auditors in their management letter and other reports.

Review of effectiveness (continued)

The CMB meets bi-monthly to consider the plans and strategic direction of the agency. The CMB reviews the Cefas risk register twice annually and corporate risks are delegated to Board members to manage.

The A&RC is a formally constituted committee of the CMB. The Committee is chaired by an external independent member and includes two further external independent members. Internal and external auditors and executives attend the meetings, with others attending as required by the Committee.

The A&RC considers and provides advice on:

- internal control and risk management: reviews the establishment and maintenance of an effective system of internal control and risk management
- internal audit: oversees the appointment and effective operation of internal audit; ensures effective co-ordination between the internal and external auditor; reviews the internal audit programme and considers the major findings of internal audit coverage and management response
- external audit: enhances the effectiveness of the relationship with external audit; discusses with the external auditor, before the audit commences, the nature and scope of the

Performance management

The performance of Cefas is regularly and routinely measured against key objectives set by the CMB, creating a framework of management control to continually improve performance. The key processes within that framework are summarised below.

- Performance cycle: the organisation's vision is clearly established and publicised. All subsequent strategy, business plans, objectives and training plans are designed to support the vision.
- Business planning and prioritisation: a fiveyear corporate plan and a more detailed annual budget are set before the start of each year. Performance against these and additional targets are reviewed and reported on monthly by the CMB.
- Key performance indicators: progress is reported on monthly. These link to the key strategic aims and to the management of

audit and interaction with internal audit plans; reviews external audit reports

financial reporting: reviews the annual financial statements before submission to the CMB, focusing particularly on changes in and compliance with accounting policies and practices, major judgmental areas and significant adjustments resulting from the audit.

The A&RC actively seeks to add value to Cefas as part of its work.

Meetings are held not less than four times per year in accordance with an annual schedule, which includes oversight of the *Annual Report and Accounts* drafting, the outcome of risk review, and health and safety reporting, as well as the routine review of audit reports.

Cefas receives regular reports by internal audit, to government audit standards, which include the Head of Internal Audit's independent opinion on the adequacy and effectiveness of the agency's system of governance, internal control and the system for risk management, together with recommendations for improvement. PricewaterhouseCoopers LLP have provided the internal audit service. The work of internal audit is informed by an analysis of the risks to which Cefas is exposed, and annual audit plans are based on this analysis.

key risks. Such indicators are both robust – to ensure comparability; and flexible – to adapt to changing needs.

- Accountability for performance: Cefas' corporate objectives are embedded within the objectives of appropriate CMB members who in turn cascade these through the organisation.
- Rewarding performance: good performance is celebrated within Cefas through internal publicity. An annual performance-related bonus of up to 10% of salary might also be awarded for excellent performance, as assessed in annual reviews.
- Improving performance: plans, objectives and targets are regularly updated to improve performance. Surveys of customers and staff are conducted to inform this process. Staff innovation incentive schemes are also in place.

Programme and project management

Our acquisition and procurement projects are subject to Office of Government Commerce (OGC) reviews. The OGC requires that Defra provides an annual assurance on programme and project management (PPM) controls within the Defra network. The OGC's mandatory PPM

Information assurance

In the Cabinet Office's interim progress report on data-handling procedures, a commitment was made that information assurance will be controls are in place and operating consistently and effectively in Cefas, for suitable projects.

All projects are governed using specific projectmanagement processes and an IT system designed to monitor resource and performance.

reported upon. Cefas has no data-related incidents to report.

Significant internal control problems

Last year, I reported that an internal audit of the Applied Technology division identified some weaknesses in the IT control environment. An action plan to remove the identified weaknesses has been implemented and reaudit in August 2007 showed that the remaining weaknesses are unlikely to impact upon the achievement of organisational objectives.

The Health and Safety Executive (HSE) investigated two incidents dating from November 2006 and July 2007 linked to the potential exposure of a small group of staff and contractors to arsenic compounds. Cefas was served with two Crown Improvement Notices on 31 October 2007. The first concerned failures in Cefas' control and use of carcinogens. The second Notice concerned failures in the operation and extent of Cefas' occupational health programme. The Notices required Cefas to take specific actions by the end of March 2008. The actions were carried out and assessed for compliance by the HSE. A letter confirming the agency's compliance was issued by the HSE in April 2008.

Cefas takes health and safety very seriously. It is committed to sustaining and improving its systems and practices to ensure that its staff and contractors have a safe place to work. The agency has an annual safety plan, with associated actions, to raise staff awareness and continuously improve performance in this area

Advice and continuous improvement

I have been advised on the implications of the result of my review of effectiveness of the system of internal control by the CMB and the A&RC, and a plan to address weaknesses and ensure continuous improvement of the system is in place.

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Richard Judge, Chief Executive 21 May 2008

Certificate and report of the Comptroller and Auditor General to the House of Commons

I certify that I have audited the financial statements of the Centre for Environment, Fisheries and Aquaculture Science for the year ended 31 March 2008 under the Government Resources and Accounts Act 2000. These comprise the Income and Expenditure Account and Statement of Recognised Gains and Losses, the Balance Sheet, the Cash Flow Statement 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 Agency, the Chief Executive and auditor

The Agency and Chief Executive, as Accounting Officer, are responsible for preparing the *Annual Report*, which includes the Remuneration Report, and the financial statements in accordance with the Government Resources and Accounts Act 2000 and HM Treasury directions made thereunder and for ensuring the regularity of financial transactions. These responsibilities are set out in the Statement of Accounting Officer's Responsibilities.

My responsibility is to audit the financial statements and the part of the Remuneration Report to be audited in accordance with relevant legal and regulatory requirements, and with International Standards on Auditing (UK and Ireland).

I report to you my opinion as to whether the financial statements give a true and fair view and whether the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with HM Treasury directions issued under the Government Resources and Accounts Act 2000. I report to you whether, in my opinion, the information, which comprises the management commentary, included in the *Annual Report*, is consistent with the financial statements. I also report whether 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.

In addition, I report to you if the Agency has not kept proper accounting records, if I have not received all the information and explanations I require for my audit, or if information specified by HM Treasury regarding remuneration and other transactions is not disclosed.

I review whether the Statement on Internal Control reflects the Agency's compliance with HM Treasury's guidance, and I report if it does not. I am not required to consider whether this statement covers all risks and controls, or to form an opinion on the effectiveness of the Agency's corporate governance procedures or its risk and control procedures.

I read the other information contained in the Annual Report and consider whether it is consistent with the audited financial statements. This other information comprises the management commentary. I consider the implications for my report if I become aware of any apparent misstatements or material inconsistencies with the financial statements. My responsibilities do not extend to any other information.

Basis of audit opinion

I conducted my audit in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board. My audit includes examination, on a test basis, of evidence relevant to the amounts, disclosures and regularity of financial transactions included in the financial statements and the part of the Remuneration Report to be audited. It also includes an assessment of the significant estimates and judgments made by the Agency and Chief Executive in the preparation of the financial statements, and of whether the accounting policies are most appropriate to the Agency's circumstances, consistently applied and adequately disclosed. I planned and performed my audit so as to obtain all the information and explanations which I considered necessary in order to provide me with sufficient evidence to give reasonable assurance that the financial statements and the part of the Remuneration Report to be audited are free from material misstatement, whether caused by fraud or error, and that 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. In forming my opinion I also evaluated the overall adequacy of the presentation of information in the financial statements and the part of the Remuneration Report to be audited.

Opinions

Audit opinion

In my opinion:

- the financial statements give a true and fair view, in accordance with the Government Resources and Accounts Act 2000 and directions made thereunder by HM Treasury, of the state of the Agency's affairs as at 31 March 2008, and of the net surplus, recognised gains and losses, and cash flows for the year then ended;
- the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with HM Treasury directions issued under the Government Resources and Accounts Act 2000; and
- information, which comprises the management commentary, included within the Annual Report, is consistent with the financial statements.

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.

Report

I have no observations to make on these financial statements.

T J Burr

Comptroller and Auditor General

National Audit Office 151 Buckingham Palace Road Victoria, London SW1W 9SS

29 May 2008

Financial statements of accounts

Scallops (*Pecten Maximus*)

Income and expenditure account

For the year ended 31 March 2008

	Notes	2007–08 £'000	2006–07 £'000
Turnover	2 and 3	47,557	43,342
Cost of sales	4 and 5	(45,761)	(41,288)
Operating surplus		1,796	2,054
(Loss) on disposal of fixed assets		(52)	(52)
Notional interest payable	25	(1,709)	(1,826)
Net surplus	13	35	176
Percentage total cost-recovery		100	100

Statement of total recognised gains and losses

For the year ended 31 March 2008

	2007–08 £′000	2006–07 £'000
Surplus for the year	35	176
Gain on the indexation of fixed assets	2,960	1,430
Impairment of land and buildings	0	(6,812)
Total gains/(losses) recognised in year	2,995	(5,206)

All operations are continuing

The notes on pages 46 to 59 form part of these accounts.

Balance Sheet

As at 31 March 2008

	Notes	£′000	2007–08 £'000	As restated 2006–07 £'000
Fixed assets				
Tangible fixed assets	7		50,605	50,694
Investments	8		150	150
Total fixed assets			50,755	50,844
Current assets				
Debtors	9	6,174		4,240
Cash at bank and in hand	18	9,561		7,143
Total current assets		15,735		11,383
Creditors				
Amounts falling due within one year	10	(9,951)		(7,454)
Net current assets			5,784	3,929
Total assets less current liabilities			56,539	54,773
Provisions for liabilities and charges	12		(3,230)	(1,154)
Total assets less liabilities			53,309	53,619
Taxpayers' equity				
General Fund	13		41,315	44,585
Revaluation Reserve	13		11,994	9,034
Total reserves as at 31 March			53,309	53,619

The notes on pages 46 to 59 form part of these accounts.

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Richard Judge Chief Executive and Agency Accounting Officer Date: 21 May 2008

Cash flow statement

For the year ended 31 March 2008

	Notes	2007–08 £'000	2006–07 £'000
Net cash inflow from operating activities	14	8,472	7,666
Capital expenditure and financial investment	15	(867)	(1,397)
Financing	16	(5,187)	(5,000)
Net cash inflow	17	2,418	1,269

The notes on pages 46 to 59 form part of these accounts.

Note 1. Statement of accounting policies

1.1 Statement of accounting policies

These financial statements have been prepared in accordance with the *Government Financial Reporting Manual* for 2007–08 issued by HM Treasury. The particular accounting policies adopted by Cefas are described below. The accounting policies used in preparing the accounts are consistent with those used last year.

1.2 Accounting convention

These accounts have been prepared under the historical cost convention, modified to include the revaluation of fixed assets at their value to Cefas by reference to their current costs.

1.3 Tangible fixed assets

Asset values are modified annually by the use of indices for current cost accounting as supplied by the Office for National Statistics.

1.3.1 Land and buildings

Land and buildings are professionally valued at intervals of no greater than five years. The lives given to the buildings fall in the range of four to 41 years.

The title to the freehold land and buildings occupied by Cefas is held by Defra.

1.3.2 Other fixed assets

The capitalisation threshold for fixed assets is £3,000. Asset pools exist for items of IT equipment with individual values ranging from £500 to £3,000. As from September 2003, computers costing less than £3,000 have not been capitalised.

1.3.3 Depreciation of tangible fixed assets

Depreciation is provided on all fixed assets, with the exception of land, at rates calculated to write off the valuation of each asset on a straight-line basis over its expected useful economic life.

Asset lives are as follows:

Buildings	4 – 41 years
Information technology	2 – 7 years
Scientific and general equipment	5 – 10 years
Vessels	15 – 30 years
Vehicles	6 – 8 years
Fixtures and fittings	3 – 30 years

1.4 Investments

Investments are reported at market value or at cost where market value cannot be readily ascertained. In accordance with the *Government Financial Reporting Manual*, the fixed-asset investment has not been consolidated as it is outside the departmental boundary.

1.5 Research and development (R&D)

Expenditure on R&D (seedcorn projects) is treated as an operating cost in the year in which it is incurred and taken to the income and expenditure account. Fixed assets, which are acquired for use in R&D, are depreciated over their useful economic life.

1.6 Government grants

Grants are recognised in the same period as their related expenditure. Grants towards fixed-asset purchases are treated as a deferred creditor and recognised as income over the useful life of the asset.

1.7 Operating income (turnover)

Operating income (turnover) is shown net of value added tax (VAT) and comprises fees and charges for services provided to core Defra, external customers, other government agencies and public-sector repayment work receipts from the EU.

Turnover is recognised over the term of the individual contract in line with work done.

1.8 Capital charge

A notional charge, reflecting the cost of capital used by Cefas, is included in the income and expenditure account. The charge is calculated at the government standard rate on the average value of all assets excluding cash held at the Office of the Paymaster General, less liabilities and excluding donated assets.

1.9 Taxation

No taxation is payable on the surplus generated by Cefas.

Cefas is included under the VAT registration of Defra. Irrecoverable VAT, excluding that on capital purchases, is charged to the income and expenditure account in the year in which it is incurred.

1.10 Foreign exchange

Monetary assets and liabilities denominated in foreign currencies are translated using the rate of exchange at the Balance Sheet date. Transactions in foreign currencies are translated using the rate of exchange at the date of each transaction; all differences are charged/(credited) to the income and expenditure account.

1.11 Notional charges

In addition to the capital charge, the following notional costs borne on the income and expenditure account are credited to the General Fund:

- Defra maintenance charges
- Defra central overhead charges
- audit fee
- redundancy and early retirement
- interest.

1.12 Insurance

Cefas, in common with other government bodies, does not insure the majority of its assets. Losses and compensations are charged to the income and expenditure account.

1.13 Pensions

Pension benefits are provided through the civil service pension arrangements. From 1 October 2002, civil servants may be in one of three statutory-based "final salary" defined-benefit schemes (Classic, Premium or Classic Plus). The schemes are unfunded, with the cost of benefits met by monies voted by Parliament each year. Pensions payable under Classic, Premium, and Classic Plus are increased annually in line with changes in the Retail Prices Index. The provisions of the Principal Civil Service Pension Scheme (PCSPS) cover present and past employees, which is non-contributory and unfunded. Although the scheme is a defined-benefit scheme, liability for payment of future benefits is a liability of the PCSPS. Cefas meets the cost of pension cover provided for the staff it employs by payment of charges calculated on an accruing basis. There is a separate scheme statement for the PCSPS as a whole.

New entrants after 1 October 2002 may choose between membership of Premium or joining a good-quality "money purchase" stakeholder arrangement with a significant employer contribution (the Partnership Pension Account).

1.14 Provisions

1.14.1 Early departure costs

Cefas is required to meet the additional cost of benefits beyond the normal PCSPS benefits in respect of employees who retire early. Cefas provides in full for this cost when the earlyretirement programme has been announced and is binding on Cefas. Cefas may, in certain circumstances, settle some or all of its liability in advance by making a payment to the Paymaster General's account at the Bank of England for the credit of the Civil Superannuation Vote. The amount provided is shown net of any such payments and is discounted using the government standard rate of 2.2%.

1.14.2 Bad debt provision

A provision is held against the trade debtor balance. This is based on a proportion of the debts outstanding plus any specific amounts.

1.15 Leases

Cefas holds no lease where substantially all the risks and rewards of the leased asset are borne by the agency. Other leases are regarded as operating leases and the rentals are charged to the income and expenditure account on a straightline basis over the terms of the lease.

1.16 Going concern

These accounts have been prepared on the basis that Cefas is a going concern.

Note 2. UK government income

	2007–08 £'000	2006–07 £'000
Defra	34,392	33,103
Defra agencies	983	999
Other government departments	5,534	4,846
Total UK government income	40,909	38,948

Note 3. Non-UK government income

	2007–08 £'000	2006–07 £'000
UK public sector	669	744
UK private sector	3,247	876
European Union	1,915	1,842
Other non-UK government	817	932
Total non-UK government income	6,648	4,394

Note 4. Staff-related expenditure

(a) Staff costs

	Employed staff £′000	Others £'000	2007–08 Total £'000	2006–07 Total £'000
Wages and salaries	15,230	522	15,752	15,727
Social Security costs	1,153	0	1,153	1,160
Superannuation	2,777	0	2,777	2,693
Total staff expenditure	19,160	522	19,682	19,580

(b) The average number of persons employed by Cefas during the year was:

	Employed staff No.	Others No.	2007–08 Total No.	2006–07 Total No.
Staff resource	508	15	523	533
Total	508	15	523	533

(c) Pension benefits

Pension benefits are provided through the civil service pension (CSP) arrangements. From 1 October 2002, civil servants may be in one of three statutory-based "final salary" definedbenefit schemes (Classic, Premium or Classic Plus). The schemes are unfunded, with the cost of benefits met by monies voted by Parliament each year. Pensions payable under Classic, Premium, and Classic Plus are increased annually in line with changes in the Retail Prices Index. New entrants after 1 October 2002 may choose between membership of Premium or joining a good-quality "money purchase" stakeholder arrangement with a significant employer contribution (the Partnership Pension Account).

Employee contributions are set at the rate of 1.5% of pensionable earnings for Classic and 3.5% for Premium and Classic Plus. Benefits in Classic accrue at the rate of 1/80th of pensionable earnings for each year of service. In addition, a lump-sum equivalent to three years' pension is payable on retirement. For Premium, benefits accrue at the rate of 1/60th of pensionable earnings for each year of service. Unlike Classic, there is no automatic lump sum (but members may give up (commute) some of their pension to provide a lump sum). Classic Plus is essentially a variation of Premium, but with benefits in respect of service before 1 October 2002 calculated broadly as per Classic.

The Partnership Pension Account is a stakeholderpension arrangement. The employer makes a basic contribution of between 3% and 12.5% (depending on the age of the member) into a stakeholder-pension product chosen by the employee. The employee does not have to contribute but where they do make contributions, the employer will match these up to a limit of 3% of pensionable salary (in addition to the employer's basic contribution). Employers also contribute a further 0.8% of pensionable salary to cover the cost of centrally provided risk-benefit cover (death in service and ill-health retirement).

Further details about the CSP arrangements can be found at www.civilservice-pensions.gov.uk.

The 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 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 to secure pension benefits in another 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 CSP arrangements and for which the civil service Vote has received a transfer payment commensurate to 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 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 pensionscheme arrangement) and uses common market valuation factors for the start and end of the period.

CETVs are calculated within the guidelines and framework prescribed by the Institute and Faculty of Actuaries.

The pension entitlements of Cefas' most senior managers are shown on page 33 of the report.

(d) Early departure costs

Early departure costs in 2007–08 amounted to £149,000 (2006–07: £51,000), exclusive of employer's contributions to National Insurance and superannuation, for lieu of notice and compensation for loss of pension.

Note 5. Other expenditure

	2007–08 £'000	2006–07 £′000
Laboratory consumables	4,881	4,117
Laboratory – outsourced work	2,783	1,699
Depreciation	3,581	3,493
Impairment	611	988
Vessels and charters	3,551	3,090
Accommodation	4,042	3,317
Travel and subsistence	1,616	1,476
Professional charges and fees	482	842
Internal audit	57	49
External audit	38	38
Recruitment and training	626	467
IT costs	1,061	681
Defra management overheads	135	138
Telecommunications	132	125
Postage	201	164
Stationery and printing	171	181
Library purchases	154	160
Provision for future costs	30	365
Doubtful debt provision	(84)	85
Early departure costs	149	51
Relocation and severance expenses	1,801	35
Other expenditure	61	147
Total expenditure	26,079	21,708

Note 6. Segmental report

		2007–08			2006–07	
	Government bodies £'000	Other £'000	Total £'000	Government bodies £'000	Other £'000	Total £'000
Turnover	40,909	6,648	47,557	38,948	4,394	43,342
Cost of sales	(39,737)	(6,024)	(45,761)	(37,204)	(4,084)	(41,288)
Surplus for the year	1,172	624	1,796	1,744	310	2,054
Return on capital employed	3%	9.8%	3.9%	3.5%	5.5%	3.7%

Note 7. Tangible fixed assets

	Land and buildings	Vessels	Information technology	Scientific equipment	General equipment	Assets in course of construction	Total
Cost or valuation	£′000	£'000	£′000	£'000	£'000	£′000	£′000
At 1 April 2007	31,701	29,058	3,989	10,509	1,074	27	76,358
Indexation	739	2,359	32	236	6	0	3,372
Additions	85	0	147	891	18	54	1,195
Transfers	0	(6)	3	159	(156)	0	0
Disposals	0	0	(259)	(210)	(56)	0	(525)
At 31 March 2008	32,525	31,411	3,912	11,585	886	81	80,400
Depreciation							
At 1 April 2007	(10,900)	(3,855)	(2,990)	(7,040)	(879)	0	(25,664)
Indexation	0	(313)	(13)	(84)	(2)	0	(412)
Provided in-year	(1,317)	(1,047)	(302)	(803)	(112)	0	(3,581)
Impairment	(611)	0	0	0	0	0	(611)
Transfers	0	0	(3)	(137)	140	0	0
Disposals	0	0	244	176	53	0	473
At 31 March 2008	(12,828)	(5,215)	(3,064)	(7,888)	(800)	0	(29,795)
Net book value At 31 March 2008	19,697	26,196	848	3,697	86	81	50,605
At 31 March 2007	20,801	25,203	999	3,469	195	27	50,694

Land and buildings were revalued with effect from 1 April 2005 by the Valuation Office Agency, 50 Frederick Street, Edinburgh. The assets were revalued on an "existing use" basis. This valuation has been used in preparing the accounts up to 31 March 2008.

An amount of £611,000 has been charged in respect of the impairment of the Lowestoft and Burnham-on-Crouch laboratories as a consequence of Cefas' decision to relocate.

Note 8. Fixed-asset investments

	£′000
Cost At 1 April 2007 Additions Disposals	150 0 0
At 31 March 2008	150
Provisions At 1 April 2007 Movement	0 0
At 31 March 2008	0
Net book value At 31 March 2008	150
At 31 March 2007	150

In 2001 Cefas purchased the entire share capital of Cefas Technology Limited (CTL) for £150,000.

The Cefas Management Board (CMB) has considered the value of the investment and has recorded the investment at cost. This will be reviewed on a regular basis and provision made for any impairment in value.

In accordance with the *Government Financial Reporting Manual*, the fixed-asset investment has not been consolidated as it is outside the departmental boundary.

Cefas' share of the net assets and results of the above investment are as follows:

	2007–08 £'000	2006–07 £'000
Net assets at 31 March	876	818
Turnover	660	659
Profit for the year	66	168

Note 9. Debtors

	2007–08 £'000	As restated 2006–07 £'000
Trade debtors	3,267	1,394
VAT	62	26
Defra	702	1,753
Prepayments and accrued income	2,131	1,054
Sundry debtors	12	13
Total debtors	6,174	4,240

Prepayments and accrued income include amounts totalling £1,802,000 that would previously have been described as work in progress, £703,000 for 2006–07. The 2007 comparatives have been restated accordingly in these accounts. There is no effect on the income and expenditure account or on the results for the year.

Note 10. Creditors

	2007–08 £'000	2006–07 £'000
Amounts falling due within one year		
Trade creditors	283	496
Other taxation and Social Security	363	364
Accruals	4,171	1,990
Defra	123	127
Other creditors	259	268
Deferred income	2,030	1,782
Deferred income, Defra	2,722	2,427
Total creditors	9,951	7,454

Other creditors includes employee pension contributions as at 31 March 2008 totalling £257,000 (2006–07: £265,000).

Note 11. Intra-government balances

	Debtors: Amounts falling due within one year	Creditors: Amounts falling due within one year
	£'000	£′000
Other central government bodies Local authorities NHS Trusts Public corporations and trading funds Bodies external to government Balance at 31 March 2008	2,162 0 0 4,012 6,174	3,208 0 0 6,743 9,951
Other central government bodies Local authorities NHS Trusts Public corporations and trading funds Bodies external to government	2,882 0 0 1,358	2,918 0 0 4,536
Balance at 31 March 2007	4,240	7,454

	Balance at 1 April 2007	Provided in the year	Utilised in the year	Change in discounted amount	Balance at 31 March 2008
	£'000	£'000	£'000	£′000	£'000
Early retirement	562	165	(329)	10	408
Severance	0	1,679	0	0	1,679
Estate dilapidations	207	408	0	0	615
Contract losses	200	293	(100)	0	393
Legal claims	185	25	(75)	0	135
Total	1,154	2,570	(504)	10	3,230

Note 12. Provisions for liabilities and charges

Early retirement: The provision relates to early-retirement and pension commitments, to provide for the cost of future pension payments to staff who have retired before their 60th birthday. The timing and amounts payable are reviewed annually by the Pay and Personnel Agency.

Severance: Cefas has planned for the relocation and consolidation of the Burnham-on-Crouch and Lowestoft sites. A voluntary early-severance scheme was offered to a limited number of Burnham and Lowestoft staff, as part of Cefas' transformation plans.

Estate dilapidations: Leases on stores at Pinbush Road, Lowestoft, and an unused site at Headcorn, Kent, include terms that require Cefas to make good the respective sites back to the state in which the leases were entered into.

Contract losses: This reflects a provision for losses that are reasonably likely to be incurred in respect of the Offshore Chemical Notification Scheme. The delivery of this project is already overdue and there is a significant risk of incurring substantial additional resources for the reworking of system code.

Legal claims: This represents legal claims levied against Cefas and the expected liabilities arising as a result.

No reimbursement is expected in relation to any of the amounts provided for.

Note 13. Movement on reserves

	General Fund	Revaluation Reserve	Total
	£′000	£'000	£'000
Balance at 1 April 2007	44,585	9,034	53,619
Notional charges	173	0	173
Notional interest	1,709	0	1,709
Revaluation	0	2,960	2,960
Income and expenditure account	35	0	35
Excess cash funding repayable to Defra	(5,187)	0	(5,187)
Balance at 31 March 2008	41,315	11,994	53,309

Note 14. Reconciliation of net surplus to net cash flow from operating activities

		2007–08		2006-07
	£'000	£'000	£′000	£'000
Net surplus		35		176
Adjustments for non-cash transactions				
Depreciation charges	3,581		3,493	
Impairment	611		988	
Notional charges	1,882		2,002	
Loss on disposal of fixed assets	52		52	
Defra receipt re. disposal of assets	0		(60)	
Provisions	2,580		443	
		8,706		6,918
Adjustments for movements in working				
capital other than cash				
(Increase) in debtors	(1,934)		(254)	
Increase in creditors	2,169		1,087	
		235		833
Use of provisions		(504)		(261)
Net cash inflow from operating activities		8,472		7,666

Note 15. Capital expenditure and financial investment

	2007–08 £'000	2006–07 £'000
Payments to acquire tangible fixed assets Receipts from sale of tangible fixed assets	(867)	(1,472) 75
	(867)	(1,397)

Note 16. Financing

	2007–08 £'000	2006–07 £′000
Excess cash funding repaid to Defra	(5,187)	(5,000)
	(5,187)	(5,000)

Note 17. Analysis of changes in cash during the year

	2007–08 £'000	2006–07 £'000
Balance at 1 April Net cash flow	7,143 2,418	5,874 1,269
Balance at 31 March	9,561	7,143

Note 18. Cash at bank and in hand

	2007–08 £'000	2006–07 £'000
Commercial banks	311	834
Office of the Paymaster General	9,248	6,307
Cash in hand	2	2
Total cash at bank and in hand	9,561	7,143

The balance at 31 March 2008 comprised amounts issued from the Consolidated Fund for supply but not spent at year-end.

Note 19. Capital commitments

At 31 March 2008 Cefas had capital commitments totalling £227,000 (2006–07: £NIL).

Note 20. Post-Balance-Sheet events

There are no post-Balance-Sheet events to report.

Note 21. Contingent liabilities

Management consider specific risks exist relating to potential personal injury claims. The range of these contingent liabilities is currently believed to be between no claim and £150,000.

Note 22. Operating leases

Rentals under operating leases are charged to the income and expenditure account on a straight-line basis over the terms of the lease.

At 31 March 2008, Cefas was committed to making the following payments during the next financial year in respect of operating leases:

		2007–08			2006–07	
	Vehicles	Land	IT equipment	Vehicles	Land	IT equipment
	£'000	£'000	£′000	£′000	£'000	£′000
Operating leases that expi	ire					
Within one year	1	4	6	11	7	5
Between two to five years	52	34	0	49	0	6
After five years	0	73	0	0	89	0
Total	53	111	6	60	96	11

Note 23. Related-party transactions

Cefas has dealings with the Department for Environment, Food and Rural Affairs (Defra) and its sponsored bodies. One of Cefas' non-executive directors was employed by Defra.

CTL is a fixed-asset investment (see note 8). The shares are held by Richard Judge as nominee of the trustees for Cefas. Turnover of £331,000 was derived from CTL (2006–07: £194,000) and costs of £554,000 were payable to CTL (2006–07: £549,000). At 31 March 2008 £131,000 was due from CTL (2006–07: £62,000) and £9,000 was owed to CTL (2006–07: £NIL).

No CMB member, members of key management staff or other related parties have undertaken any material transactions with Cefas, CTL or other related parties during the year.

Note 24. Prompt-payment policy

Cefas has a duty to meet the Confederation of British Industry's 30-day payment policy. During the year the percentage of invoices that met the policy is as below:

	2007–08 %	2006–07 %
Quarter 1	96	95
Quarter 2	94	88
Quarter 3	95	92
Quarter 4	86	95
Average percentage of invoices paid within 30 days		93

No interest was paid in respect of late payment of commercial debt (2006–07: £NIL).

Note 25. Notional interest

	2007–08 £'000	2006–07 £'000
Interest relating to fixed assets	1,709	1,826
Total notional interest	1,709	1,826

Interest calculated on working capital is £NIL (2006–07: £NIL).

Acronyms

A&RC	Audit and Risk Committee
BREEAM	Building Research Establishment Environmental Assessment Method
BTEC	Business and Technology Education Council
Cefas	Centre for Environment, Fisheries & Aquaculture Science
CETV	cash equivalent transfer value
CMB	Cefas Management Board
CSP	civil service pension
CTL	Cefas Technology Limited
Defra	Department for Environment, Food and Rural Affairs
Dena	data storage tag
EA	Environment Agency
EC	European Commission
EU	European Union
FHI	Fish Health Inspectorate
FP7	Framework Programme 7 [EU research programme]
FSA	Food Standards Agency
FSP	Fisheries Science Partnership
H&S	health and safety
HPLC	high-pressure liquid chromatography
HR	human resources
HSE	Health and Safety Executive
ICES	International Council for the Exploration of the Sea
ISO	International Organization for Standardization
IT	information technology
КНУ	koi herpes virus
LSP	Laboratory Strategy Programme
MCCIP	Marine Climate Change Impacts Partnership
MSC	Marine Stewardship Council
OGC	Office of Government Commerce
OiE	Office International des Epizooties [World Organisation for Animal Health]
PAC	Public Accounts Committee
PPM	programme and project management
PSP	paralytic shellfish poisoning
R&D	research and development
SDAP	Sustainable Development Action Plan
SMT	senior management team
UEA	University of East Anglia
UKAS	United Kingdom Accreditation Service
UKMMAS	UK Marine Monitoring and Assessment Strategy
VAT	value added tax



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Further information about Cefas, our activities and services, and news of recent developments can be found on our website: www.cefas.co.uk

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