

FR Corporate Plan

2011-15



Foreword

Forest Research's world-class research programme is helping us and many of our partners get ahead of the game – from tackling potentially devastating tree diseases to putting forests in the front line of mitigating climate change.

Some of the threats from tree diseases have been, and remain, very serious. If unchecked, millions of trees will be lost to new diseases such as *Phytophthora ramorum* and red band needle blight. Working with Defra, we've made sure the Government's new Tree Health and Biosecurity Action Plan is underpinned by cutting edge research.

We're looking into a wide range of other important issues, from inspiring behaviour change in woodland managers to spurring economic activity within the forestry sector and wider business. All of this builds on the research priorities detailed in the Forestry Commission's *Science and Innovation Strategy*, launched in 2010.

We also want to make this research as compelling as possible, and relevant to people's lives. Using webinars and other innovative sharing technology helps, but we also need to tell the right stories around these issues beyond the science community, and in language people can relate to.

I am proud to introduce this Corporate Plan and look forward to working with Forest Research and other colleagues on trying to stay ahead of the game – for trees, for people, for business and for wildlife.

Pamela Warhurst CBE, Chair



The Government's vision

Domestic forestry has a key role to play in meeting the Government's priorities of:

- helping to enhance the environment and biodiversity to improve quality of life
- supporting a strong and sustainable green economy, resilient to climate change

The Government believes that research and analysis is at the heart of good policymaking as it provides sound and high-quality evidence for decision-making, helps find new policy solutions and helps to identify and tackle future issues. Defra particularly emphasises the need for research to support a strong and sustainable green economy that is resilient to climate change.



Defra's "Evidence Investment Strategy 2010-13 and beyond 2011 update" (EIS) recognises three main evidence challenges for Defra and wider society:

- sustainable food production
- climate change adaptation and mitigation
- protecting ecosystem services

The EIS also recognises that the policy landscape has evolved and that the challenges ahead will require better use of existing knowledge, and research will need to be flexible, efficient and creative in how existing and new policy issues are addressed. The FC will follow the newly issued Government Chief Scientific Adviser's *Guidelines on the Use of Scientific and Engineering Advice in Policy Making* (Government Office for Science, 2010).

Forestry policy is a fully devolved responsibility of the separate administrations in England, Northern Ireland, Scotland and Wales, and continues to develop in distinctive ways. A common requirement for all countries is efficient and sustainable forestry practice, which integrates effectively with other rural and urban land-uses and wider government policies. This will be reflected in multi-disciplinary research and, above all, in partnership-working for the cost-effective provision of research, evidence and advice. To meet these requirements the FC reviewed its Science and Innovation Strategy during 2010.

The FC's Science and Innovation Strategy (2010) identifies that FR's scope ranges from horizon scanning, strategic and sometimes long-term research and monitoring in support of policy, to technical development and knowledge exchange in support of practice. Research commissioned by the FC will ensure that the UK's forests and woodlands are able to maximise their contribution to the social and cultural development of communities through research into:

- the maintenance of a diverse, healthy, and resilient environment;
- people's enjoyment of the countryside, both rural and peri-urban;
- efficient utilisation of forest products to maintain and improve economic competitiveness.

Delivering the vision – Our role

Forest Research is the Forestry Commission's research agency. Forest Research is internationally renowned in the development of sustainable forestry and Britain's principal organisation for forestry and tree related research.

Our aims are:

1. To provide robust, quality science to inform the development and delivery of UK Government and devolved administration forest policies.
2. To provide innovative applied research, development and monitoring services to UK, European and international forestry stakeholders.
3. To transfer research knowledge directly, or in partnership with others, to UK and international audiences.

Our priorities:

We will focus on:

- Ecosystem resilience and climate change.
- Sustainable forest management and society.
- Knowledge exchange.
- Restructuring our business.



Ecosystem resilience and climate change

The changing climate and increasing global trade in plant materials raise difficult problems for the conservation of woodland biodiversity, the capacity of forests to provide climate change and environmental mitigation, and the susceptibility of trees and woods to pests and diseases. Ensuring current and future woodlands can adapt to future climates and disease threats whilst maintaining the suite of ecosystem services they provide (e.g. biodiversity, recreation and health) is a key challenge.



We will undertake research to give guidance on the adaptation of forests and woodlands to climate change. This multi-disciplinary programme will: provide tools for risk assessment using climate change scenarios to inform adaptation; give recommendations and guidance for adaptation measures and; help the forest industry to work towards adaptive forest management using practical forest-scale trials. A research programme on forest carbon and greenhouse gas balances will provide the evidence to enable the UK to report on forest carbon stocks, to understand how these will change and to recommend appropriate management and policy for the UK forest sector. Climate change also represents a threat to urban infrastructure, environmental quality and the health of city dwellers. We will provide evidence on the benefits and trade-offs in order to optimise the protection and sustainable regeneration of urban trees and greenspace in UK towns and cities. We will maintain skills relating to land regeneration and the maintenance of urban greenspaces on former brownfield and contaminated sites.

Ensuring trees remain healthy and vigorous is vital to the long-term sustainable management of Britain's woodlands and forests. However, an increasing range of insects and diseases threaten tree health, sometimes due to the introduction of new pests and pathogens but also because climate change can increase vulnerability to existing insects and pathogens. In response to the increased threat from pests and pathogens, the FC and Defra have produced an Action Plan for Tree Health and Plant Biosecurity. During 2011-12 we will, wherever possible, refocus our tree health work to address the recommendations of the Action Plan. Tree health research will be increased and focussed into three key work streams:

1. Pest or pathogen-specific research to provide evidence and management solutions for damaging or potentially high-risk disorders. This includes single pathogen-incited diseases such as *Phytophthora* (*P. ramorum*, *P. lateralis* and *P. kernoviae*), Dothistroma Needle Blight, and Horse Chestnut Bleeding Canker; the invertebrate pests Pine-tree Lappet Moth, Oak Processionary Moth and Pinewood Nematode; and oak decline (mainly Acute Oak Decline), apparently caused by a combination of biotic agents.
2. The advisory and extension service, which acts as a first point of contact for reports of tree ill-health, provides training and topical information on tree pests and pathogens, as well as underpinning the tree health surveillance system embedded in the Integrated Forest Monitoring Programme. A further part of this work stream comprises formal pest risk analysis (PRA), advice provision and knowledge management in relation to national and international plant health regulations.
3. Strategic research to predict the likely effects of new pests and pathogens, and modelling the impact of climate change on existing pests and pathogens. This will feed into the formulation of management strategies to manage these risks, while taking account of forest expansion, changing species choice, and changing future threats to tree species likely to be used in adaptive forest management.



We will focus our forest experimental work on three research forests (Alice Holt Forest in England, the Dyfi catchment in Wales and the Queen Elizabeth Park in Scotland). In addition, a network of long-term forest experiments will be maintained for research, reference, monitoring, demonstration and educational purposes. To support our work on forest pests and diseases, a new forest health surveillance system will be developed. It will offer an 'early warning system' for pests and diseases, as well as quantifying their distribution and impact on the forest. Furthermore, a remote sensing project will focus on: identification of representative forest types from remotely sensed images (conifer, broadleaved etc); monitoring of changes and; estimation of stand characteristics.

We will apply our core expertise in landscape ecology, spatial planning and habitat management to develop systems that spatially measure the ecosystem services that forests and woodlands provide to society. It is hoped that such systems will help target key places for woodland creation and thus improve plans for the delivery of ecosystem services. We will conduct research to quantify the benefits of woodlands on soil, water and flood management and to evaluate the role of woodlands in integrated catchment management.

Impact

A woodland resource and structure with more adaptive capacity to deal with anticipated climate variation, more resilience to pests and diseases and an ongoing capacity to deliver ecosystem services.

FR impact indicators

- Publications, stakeholder events and management guidance on tree pests and diseases.
- Up-to-date guidance on managing forests for carbon capture, climate change resilience and ecosystem service provision.

Key Actions in 2011-12

- Continue collaborative research into the incidence, biology, epidemiology and management strategies for important forest pests and diseases.
- Produce a refreshed Disease Diagnostics Advisory Service and launch a new tree health surveillance system.
- Because tree pathogens are currently so widespread, we will incorporate the findings of pathology research into other collaborative areas of activity.
- Make a significant contribution to an international conference on the importance of trees in the built environment.
- Produce up-to-date research and information to underpin the UK Forestry Standard.

Sustainable forest management and society

The successful establishment, sustainable management and use of forests are vital if they are to contribute fully to delivering a sustainable green economy that is resilient to climate change. The concept of “the right tree in the right place” is still critical to producing the services expected of our woodlands.



New challenges for woodland regeneration are posed by climate change, the emergence of pests and diseases, changes in forest management and by changes to policy, legislation and certification. In order to provide evidence-based recommendations on how to adapt forest regeneration, research will be undertaken on seed biology, the sustainable use of pesticides, including their reduced use and the identification of non-chemical alternatives, and how to improve regeneration whilst increasing resilience and maintaining productivity. The best way to adapt forests to changing climate and increase their resilience is to increase diversity of species, provenances and structure. This requires alternative silvicultural systems to the *modus operandi* of clearfelling. Thus, we will also provide the scientific basis and associated technology transfer to ensure that alternative management approaches are available and become a significant part of forestry practice in Britain.

Statutory duties exist covering the management of habitats that contain protected species. FR will provide research to inform best practice for the management of species and woodland habitats. This work is conducted in close partnership with the conservation agencies in England, Scotland and Wales. Over the next few decades, the presence of trees and woodlands in the landscape across Great Britain will increasingly be driven by policies to halt biodiversity loss and ecosystem degradation (Defra Natural Environment White Paper 2011), and to enhance habitat diversity through more integrated land use and by supporting underpinning ecological processes (UK Forestry Standard, The



National Ecosystem Assessment 2011). Changes in woodland management practices, such as production of woodfuel (including the use of novel tree species), will increase habitat availability to vertebrates. Climate change scenarios predict an increase in population densities and ranges for deer, squirrels and feral boar driven by improved habitat quality and reduced natural mortality. We will aim to maintain expertise on large vertebrates and grey squirrels, and will continue to work closely with other agencies and the forest sector.

Our wood and timber properties programme is delivered in partnership with Edinburgh Napier University and the timber processing industry. Overall funding is reducing, consequently the programme will focus on assessing and quantifying the effects of genetic choice and silvicultural practice on the wood properties and the performance of wood products from our key timber species.

Our Biomass Energy Centre will provide information on the long-term economic and environmental sustainability of wood fuel supply chains, and the economic returns of equipment to provide wood fuel from currently unmanaged woodlands.

The natural genetic variation between trees can substantially be exploited to increase growth rates, carbon sequestration and timber quality. We will therefore continue to research how to improve the planting stock of our major conifer and broadleaved species through a programme of selection and breeding.



As the climate changes, new species and different seed origins of existing species may become well adapted to some parts of the UK, and we are testing emerging species and origins in collaboration with a number of European partners. One of these projects ('Tree4Future') focuses on the sharing of genetic material and the selection of DNA markers for selection for wood quality. We will also provide a better understanding of the distribution of genetic diversity of our native trees and woodland dwelling species in order to inform the management and conservation of the existing genetic resource of Britain. Scientific support is also provided for the implementation of the Forest Reproductive Materials Regulations, including the management of the National Register of Basic Material for Great Britain.

Access to woodland and the wide array of non-market benefits that people gain from woodlands have become key issues. FR's Social and Economic Research Group will provide evidence to support policy and practice that deliver societal benefits from trees, woods and forests. This will address well-being and quality of life, understanding the patterns of opportunity, engagement and impacts, governance, evaluation and appraisal, and knowledge transfer. Our research in this area is also linked to a number of European Union projects such as MOTIVE, ForestCLIM, Northern TOSIA and MORFOPOL.

Impact

A woodland resource that is fit-for-purpose and a sector that is informed about what to grow where and how woodlands can be used and developed to deliver additional benefits.

FR impact indicators

- The development of models and tools that enable monitoring of forest resources at GB and national level.
- Up-to-date information on species choice and silvicultural techniques that reflect possible changing climate conditions.

Key Actions in 2011-12

- Focus social science and economics research into well-being, governance behaviour change and valuation of goods and services.
- Develop the science and software to provide the growth and yield models which underpin the National Forest Inventory, Production Forecast, and contribute to Defra's reporting, arising from the Kyoto Protocol, on greenhouse gas emissions as they relate to land use, land use change and forestry.
- Develop methodologies to extend research into tree breeding - especially rapid selection and propagation - and resource quality assessment.
- Provide forest management information on tree species selection and silviculture.

Knowledge exchange

Knowledge exchange is a key part of applied science. FR is committed to ensuring that our science is available to and understandable by all those who need and use it. FR will continue to proactively publish and disseminate its work, develop its website, participate in events with professional bodies, publish in peer-reviewed journals, issue press releases and organise specific events, such as plant health days.

Impact

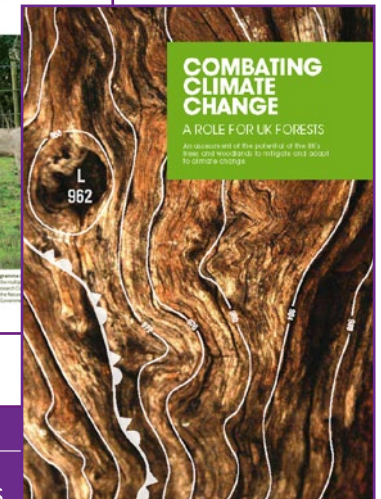
An engaged, informed and more diverse range of users of our information.

FR impact indicators

- Quantity of stakeholder events held and the feedback from these.
- Quantity and quality of publications and citations.
- Degree of interaction with professional bodies.

Key Actions in 2011-12

- Develop an agreed timetable and action plan regarding the transformation of the Library into an internet-based resource centre that houses Forestry Commission publications, reports and general literature.
- Publish at least three Forest Research Monographs a year and maintain our publication of peer-reviewed papers in high-impact science journals.



Restructuring our business

The 2010 spending review from Defra requires FR to reduce its spending by 25% over the next four years. This will require reprioritisation of our research portfolio. In order to ensure the quality of its information provision, FR will undergo an external audit of its science quality.



Impact

By March 2015, FR will have evolved its GB role to focus on its priority areas of research. There will be a reduction in FC research spend with FR between 2011-12 and 2014-15 and, as a result, FR's priorities will change as set out above. For example, due to the need to protect our forest resource, the work on tree pests and diseases will increase over the SR10 period.

FR impact indicators

- Number of staff.
- Reprioritised research spend.
- Maintenance of key core skills.
- Independent assessment of our science quality.

Key Actions in 2011-12

- Deliver the agreed annual business plan and Spending Review 2010 objectives, including securing a total of £3.3 million of other external income in 2011-12.
- Consult staff over the changes required to meet the budgets agreed in the SR10 spending review.
- Host an external Review Group, comprising scientists of international repute, to independently assess the research, scientific and technical services and knowledge exchange provided by FR, and to make recommendations on changes that will enhance science quality and fitness for purpose, and will promote knowledge exchange and delivery.
- Work with FC and Defra to provide a more integrated, efficient and streamlined approach to our functions.

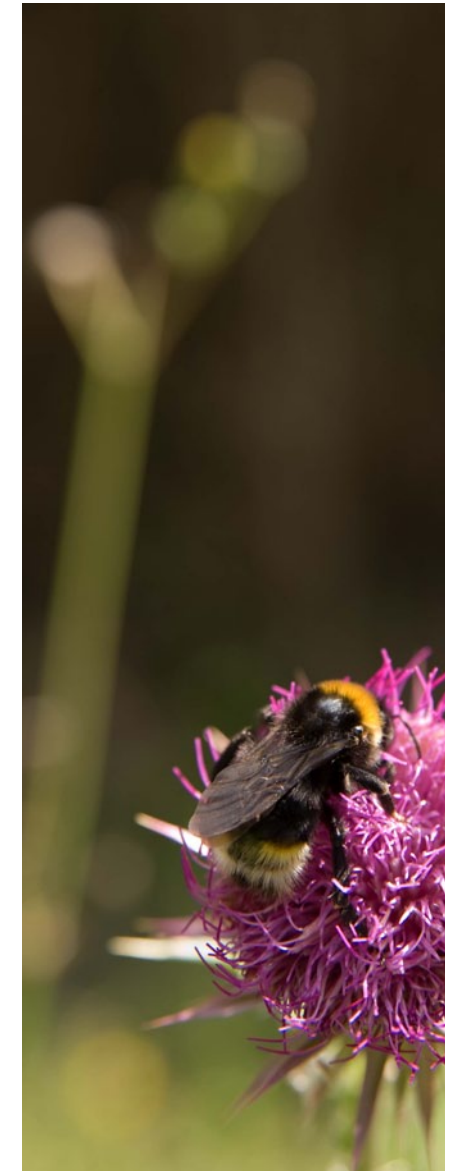


Table 1: Income and Expenditure 2010-2015

	10-11 Forecast £M	11-12 Planned £M	12-13 Indicative £M	13-14 Indicative £M	14-15 Indicative £M
Income					
FC GB Corporate and Forestry Support	9.2	9.0	8.3	7.6	7.0
FC GB Inventory, Forecasting and Operational Support	0.9	0.8	0.8	0.8	0.5
Other Contract (EU, FC, Defra, DECC, Devolved Administrations, private sector)	5.2	3.4	2.7	2.7	2.6
Total Income	15.3	13.2	11.8	11.1	10.1
Expenditure					
Staff Costs (inc Salary, ERNIC & pensions)	9.6	8.9	7.7	7.0	6.7
Depreciation	0.8	0.8	0.8	0.7	0.7
Other costs	4.8	3.5	3.3	3.4	2.7
Total Expenditure	15.2	13.2	11.8	11.1	10.1
Operating Surplus/(-) Deficit	0.1	0.0	0.0	0.0	0.0
Early retirement compensation	0.3	0.0	0.0	0.0	0.0
Cost of Capital (withdrawn from 1.4.10)	0.0	0.0	0.0	0.0	0.0
Net Surplus/(-) Deficit	-0.2	0.0	0.0	0.0	0.0

Table 2: Balance Sheet at 31 March

	10-11 Forecast £M	11-12 Planned £M	12-13 Indicative £M	13-14 Indicative £M	14-15 Indicative £M
Non-current Assets					
Property, Plant and Equipment	13.5	13.5	13.5	13.5	13.5
Other Assets	0.2	0.2	0.2	0.2	0.2
Total Non-current Assets	13.7	13.7	13.7	13.7	13.7
Current Assets	0.9	0.9	0.5	0.5	0.5
Current Liabilities	-1.9	-1.9	-1.5	-1.5	-1.5
Net Current Assets (-) Liabilities	-1.0	-1.0	-1.0	-1.0	-1.0
Total Assets less current liabilities	12.7	12.7	12.7	12.7	12.7
Provision for liabilities and charges	-0.3	-0.2	-0.2	-0.1	-0.1
Taxpayers Equity	12.4	12.5	12.5	12.6	12.6

Table 3: Cash Flow 2009-2012

	10-11 Forecast £M	11-12 Planned £M	12-13 Indicative £M	13-14 Indicative £M	14-15 Indicative £M
Net Operating surplus/(-) deficit	-0.2	0.0	0.0	0.0	0.0
Depreciation	0.8	0.8	0.8	0.7	0.7
Changes in working capital	0.0	0.0	0.0	0.0	0.0
Change in provisions	0.1	-0.2	-0.2	-0.1	-0.1
Cash inflow/(-) outflow from operating	0.7	0.6	0.6	0.6	0.6
Less: Capital Expenditure (net of Government Grants 09/10 only)	0.4	0.6	0.6	0.6	0.6
Net Cash inflow/(-) outflow	0.3	0.0	0.0	0.0	0.0

Table 4: Trends in Staff Numbers (full time equivalents)

	10-11 Forecast	11-12 Planned	12-13 Indicative	13-14 Indicative	14-15 Indicative
Total	220	184	167	163	163

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