



**Cyfoeth
Naturiol
Cymru
Natural
Resources
Wales**

National Assembly for Wales Environment & Sustainability Committee Inquiry into the Public Forest Estate in Wales

Submission by Natural Resources Wales

1. Summary

The purpose of Natural Resources Wales is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future.

We have a broad range of powers and duties and in respect of forestry we have the power to manage the Welsh Government Woodland Estate (WGWE) for purposes of our functions. We have specific statutory duties and functions under the Forestry Act 1967 to promote the interests of forestry, the development of afforestation, the production and supply of timber and the establishment and maintenance of adequate reserves of growing trees. Under the general duty we are charged with the overall ‘Balancing Duty’ and to have regard to the national interest in maintaining and expanding forestry resources. We are the Welsh Government’s key partner in supporting the delivery of the outcomes described in the Welsh Government’s strategy for trees and woodlands ‘*Woodlands for Wales*’. The Woodland Strategy established a 50 year vision and its action plan sets a partnership approach to deliver a balanced set of outcomes from all the trees, woodlands and forests in Wales – the Welsh Forest Resource. Welsh Ministers also rely on us to provide them with advice and assistance as provided for by our Establishment and Functions Orders.

The current WGWE equates to 6% of the land area of Wales and comprises 125,705.4 hectares (ha) of land managed by Natural Resources Wales. Around 13% comprises of land other than woodland such as farmland, quarries, buildings, open water, roads and rides. Much of this other land is made up of small patches of open ground within the forest (an integral part of the forest habitat) or is a vital part of the infrastructure which services forest management. 87% of the forest public forest estate is freehold and 13% leasehold. The forest estate has a capital value of £617,905,579 (excluding 2014ha Lake Vyrnwy) and the land other than woodland £35,356,064¹.

As manager of 38% of the Welsh Forest Resource, we are the largest producer of timber and provider of outdoor recreation in Wales. Woodlands provide multiple benefits in the same place at the same time and forest managers have developed expertise in handling the trade-offs when prioritising between competing objectives – a cornerstone of Sustainable Forest Management. The relative importance of woodland habitats in Wales is

¹ Provisional figures from Natural Resources Wales’ Annual Report and Accounts 2013/14 - in preparation.

high and the flow of services from them, in terms of contribution to human well-being, is generally improving with the exception of the impact of pests and diseases² (**annex 1**). There are very strong synergies between Sustainable Forest Management and the aspiration to adopt an Integrated Natural Resource Management (INRM) approach. There is international and domestic (UK and devolved) recognition³ that Sustainable Forest Management operates within a form of ecosystems services framework which is wholly complimentary to our emerging country level approach to Integrated Natural Resource Management. Delivering Sustainable Forest Management in Wales needs to be an integral part of successful implementation of Integrated Natural Resource Management. Public ownership provides Welsh Ministers with direct control and rapid delivery of public policy objectives (including but not exclusive to timber) at an influential scale in a way that would be difficult or impossible to achieve by grant aid or regulation alone.

1.1 Since vesting key successes in Natural Resources Wales' management of the WGWE include:

1.1.2 Commercial operations and focus:

- Developed our Enterprise Framework providing effective governance for the consideration of current and new enterprise activities;
- Increased our engagement with Local Authorities, Forest Holidays, new energy markets and carbon capture projects and extended our sporting rights;
- Supplied 887,000m³ of timber to the market in 2013/14 via 300 harvesting contracts providing an income of over £14 million and market 878,000m³ of timber in 2014/15;
- Completed more than 1400 hectares of replanting with over 3.4 million trees of 37 different species (twice the variety of a decade ago). The main species planted continues to be Sitka spruce (39%), followed by Douglas fir (14%), Norway spruce (11%), Serbian spruce (6%) and oak (6%);
- Saved more than 700KtCO₂ annually⁴ through our Renewable Energy Programme;
- Considering 172 small scale hydro schemes on the WGWE;
- Deliver more than £100 million over the next 25 years through the establishment of Community Trust Funds sourced across all wind energy projects starting with Pen y Cymoedd in 2016; and,
- Put in place over 900 permissions and agreements for use of the WGWE for activities benefitting communities and enterprises.

1.1.3 Business advice and support to the forest sector:

- Issued over 1200 forestry permits (ie. licences, notices, assessments);
- Approved 178 Glastir Woodland Creation contracts;
- Issued 261 new Statutory Plant Health Notices for compliance with WGs new *Phytophthora ramorum* Disease Management Plan;
- Provided training and support for staff and contractors to improve water quality management during forest operations;

² UK National Ecosystem Assessment (2011) *The UK National Ecosystem Assessment Technical Report* UNEP-WCMC, Cambridge

³ Quine, Bailey & Watts, (2013), *Sustainable Forest Management in a time of ecosystem services frameworks: a common ground and consequences*, Journal of Applied Ecology, 50, 863-867

⁴ Average annual carbon savings calculated from figures for WEBS; small scale hydro; Wind energy sites at Clocaenog (Environmental Statement annex 2.1 carbon balance assessment, March 2013, SKM Enviros); Nant y Moch (non-technical summary, May 2012, Dulas ReSolutions); Brechfa West (updated carbon balance assessment for RWE, July 2011, RSK Group PLC); Pen y Cymoedd Environmental Statement, non-technical summary).

- Provided tree health seminars attended by 200 participants from public and private sectors; and,
- Offered woodland based learning and improved outdoor learning skill sets via more than 800 educational site visits to over 19000 students – delivering the equivalent of 55000 learning / physical activity hours.

1.1.4 Management of disease outbreaks on the public forest estate:

- Undertaken annual surveillance for *Phytophthora ramorum* across Wales, inspected over 1000 suspected sites and issued 261 new SPHNs;
- Advised and supported WG in the development and implementation of their tree disease management strategy and the new *Phytophthora ramorum* Disease Management Strategy;
- Felled over 2000 hectares of infected larch since 2010 and supplied 456,000 cubic metres (m³) as a direct response to *Phytophthora ramorum* control and intend to supply around 244,000 m³ in 2014/15;
- Worked closely with local businesses and communities to reduce the impact of large scale clearfelling operations due to *Phytophthora ramorum*;
- Begun to implement our larch reduction plan on the WGWE;
- Continued to monitor *Chalara fraxinea* in Wales, development of the disease in the wider environment and produced a report into the biodiversity impacts of the disease; and,
- Undertaken a range of surveillance including statutory protected zone surveys for chestnut blight, chestnut gall wasp and pitch pine canker.

1.1.5 Progress made to deliver the recommendations of the Wales Audit Office:

- Scrutiny of progress of the 17 actions is made as a standing item at the Audit and Risk Assurance Committee;
- Three actions were completed prior to vesting with a further nine discharged after April 2013;
- Three outstanding actions are on track to be completed during 2014 and one will be taken forward by Welsh Government; and,
- Three recommendations are necessarily part of long term improvement as we respond to the evolution of Welsh Government legislation and policy and as part of good management of the organisation development process.

1.2 To continue to successfully deliver Sustainable Forest Management across the public forest estate and encourage others to do so we will:

- Support jobs and growth in Welsh business - adding more value to the timber produced in Wales;
- Encourage and advise landowners to bring under-managed woodlands into management and engage the forestry sector to contribute more fully to our INRM Programme;
- Support Welsh Government to develop mechanisms to make woodland creation attractive, by using the UK Woodland Carbon Code and developing a coherent set of market mechanisms for the provision of ecosystem services and woodlands special role in carbon abatement;
- Work with communities so that they have access to the benefits that flow from woodlands - especially in disadvantaged and urban areas;

- Detect and respond effectively to pests and diseases;
- Adapt to the impacts of climate change on forests - making forest ecosystems more resilient and continue to improve woodland condition;
- Improve resilience and continue to diversify the tree species we plant and ensure that the silvicultural management system we employ yields the benefits that come from the right tree in the right place for the right reasons and adopt a sound approach to genetic diversity and conservation;
- Implement regulations for sustainable forestry policy in accordance with our duties, powers and functions;
- Implement multi-purpose forestry policies and develop our strategic, tactical and operational approaches to deliver the best we can for people and place;
- Target our priority areas for the restoration of Plantations on Ancient Woodland Sites, afforested deep peat sites and conversion to native woodland whilst striving to balance the need to retain productive potential across the Welsh Forest Resource and the flow of utilisable timber products;
- Improve woodland condition especially in and around protected sites such as Special Areas of Conservation, to support the achievement of good ecological status under the Water Framework Directive and the wide range of important species dependent on careful management of the WGWE such as red squirrel and hazel dormouse; and we will,
- Manage the WGWE to the desired Sustainable Forest Management standards in an era of reducing public funding.

2.0 Introduction

Legal and good forestry practice in the United Kingdom (UK) has developed within a conceptual framework of Sustainable Forest Management committed to at International and European level over two decades. The definition of Sustainable Forest Management at a country level is represented by the UK Woodland Assurance Scheme (UKWAS) which provides the audit standard for independent certification that woodlands are in sustainable management. The UKWAS standard is complementary to the Government's own standard of sustainable forest management, the UK Forestry Standard (UKFS), which links together all the technical guidelines⁵ that are used as the basis for regulation and provision of grant aid.

We inherited the Forestry Commission's general duty under the Forestry Act 1967 to promote in Wales the interests of forestry, the development of afforestation and the production and supply of timber. That duty includes promoting the establishment and maintenance of adequate reserves of growing trees and an overall 'Balancing Duty' - key to the delivery Sustainable Forest Management. The Act confers a number of functions on us to enable it to discharge its general duty, principally the management of forestry, the land placed at its disposal by the Welsh Ministers under the Act (the WGWE) and the control of the felling of trees in any quantity via the felling licence regulations. We also exercise the Welsh Ministers' functions to acquire and dispose of forestry land, subject to

⁵ The seven Guidelines describe 39 legal requirements, 59 requirements of good forestry practice and 316 elements for sustainable forest management supplemented by best practice guidance for specific elements.

certain constraints, under an agency arrangement made under section 83 of the Government of Wales Act 2006.

Forestry policy was devolved to Wales in 2003. The development of Welsh Forestry Policy was informed by the UKFS but was also influenced by European forest policies and action plans focussing on maintaining *'the multiple functions of forests crucial to society'*.⁶ SFM is the foundation for *'Woodlands for Wales'* and the 50 year vision for the Welsh Forest Resource:

*'Wales will be known for its high-quality woodlands that enhance the landscape, are appropriate to local conditions and have a diverse mixture of species and habitats.'*⁷

The strategy sets out the environmental, social and economic benefits that woodlands in Wales should provide. It recognises that some of these outcomes may take decades to achieve, although others can be much more rapid. This framework together with the commitments (that the UK are a signatory to) set the context for forest policy in Wales and the standards to which the WGWE is expected to be managed. It also forms the basis of the management of the WGWE for multi-purpose benefits.

The established Sustainable Forest Management framework and how the UK and Wales has taken forward its commitments is presented diagrammatically at **annex 2** and shows the roles and responsibilities of Natural Resources Wales in its delivery.

3.0 The commercial operations and focus of the Natural Resources Wales;

3.1 Introduction

Our management of the WGWE is to the established Sustainable Forest Management framework guided by a series of long term plans known as Forest Design Plans (FDPs). These are the 'planning backdrop' for achieving multi-purpose objectives which respond effectively to people and place. The development of an Enterprise Framework and a methodology for qualifying existing and new ideas, and prioritising the ones to pursue further provides the governance framework in which economic opportunities can be realised.

In this section we describe our: Forest Resource Planning; Enterprise Framework; timber marketing and trade liaison; increasing the diversity and resilience of the public forest estate; renewable energy programme; and, delivery for the needs of society.

3.2 Forest Resource Planning

FDPs drive operational plans which secure the quality and quantity of local work programmes such as the identification of how the woodland will be managed and replanting or natural regeneration to achieve objectives looking 25 years ahead. It is within the context of over 220 established FDPs that commercial focus and business programmes operate. We are taking the opportunity to demonstrate successful Sustainable Forest Management through the development of a Forest Resource Planning process – modifying the established GB Forest Design Planning process for Wales - which will link the management of the WGWE with the wider management of natural resources more comprehensively. They also demonstrate how WGWE is managed alongside

⁶ Extract from Oslo Ministerial Decision on European Forests 2020: FOREST EUROPE's signatories shared vision available from <http://www.foresteurope.org/>

⁷ The Welsh Assembly Government's Strategy for Woodlands and Trees *'Woodlands for Wales'* (2009) Forestry Commission Wales

adjacent National Nature Reserves and other designated sites that sit within our expanded estate. Such an integrated approach will make it easier to build partnerships with others to plan, fund and implement delivery across land managers and sectors (shown in **annex 3**). The Forest Resource Planning process will be based on an assessment of current and potential future value of ecosystem service provision and set management objectives and plans accordingly.

3.3 Enterprise Framework

The development of existing and new enterprise activities has been identified as a priority for us in the Welsh Government's Remit Letter 2013 -14 and by many business stakeholders. The direct management of significant land based assets and resources, together with core skills in key market sectors provides a new opportunity for us to maintain and develop new innovative enterprise activities based on the principles of sustainable natural resource management. Well considered and efficiently implemented enterprise opportunities will provide useful mitigation to likely increased future pressures on Grant-in-Aid funding from Welsh Government and make an important contribution towards the Government's aspirations for jobs and growth in Wales.

Since 1 April 2013, we have developed an enterprise framework and a methodology for qualifying existing and new ideas, and prioritising the ones to pursue further based on revenue potential, minimum acceptable rates of return, *vires*, speed, ease of implementation and environmental and social fit. Our enterprise activities are wide and varied including the award of long-term contracts to supply infected larch, joint public-private ventures, WGs Housing Task Force, the lease of sporting rights to local businesses, sale of surplus agricultural land, telecommunication wayleaves and a pilot project for carbon capture using a 'payments for ecosystem services' approach.

3.4 Timber trade liaison, sales and marketing

3.4.1 Trade liaison

We have a customer manager-led approach to liaison with timber customers with ongoing communication for existing contract management and sales together with a series of scheduled formal quarterly meetings. We meet at least annually with the whole of the timber trade where we share existing in-year performance together with the rolling plan of production and sales for the future three year period. Matters such as contract and timber production performance, changes to health and safety or environmental policies and procedures that will impact upon timber harvesting on the public forest estate is also shared and discussed at the annual trade liaison meeting. We meet with key organisations on a regular basis.

For business continuity purposes we adopted the legacy body Timber Marketing Strategy 2011-16⁸ developed in consultation with the timber trade and other external stakeholders. It makes the connection between the objectives set in the *Woodland Strategy* and how timber marketing will deliver them in an annual and five year timeframe. Whilst the current strategy runs until March 2016 the significant impact of *Phytophthora ramorum* on timber production volume and flows we have decided to bring forward its review by 12 months to summer 2014 with a view to the launch of the new Timber Marketing Strategy by March 2015. The timber trade will be fully consulted in its preparation.

⁸ Timber Marketing Strategy 2 011-16, Forestry Commission Wales / WG - available at time of writing from legacy body website [http://www.forestry.gov.uk/pdf/TimberMarketingStrategy11-16.pdf/\\$FILE/TimberMarketingStrategy11-16.pdf](http://www.forestry.gov.uk/pdf/TimberMarketingStrategy11-16.pdf/$FILE/TimberMarketingStrategy11-16.pdf)

3.4.2 Timber marketing

Our current Timber Marketing Strategy aims for equality between long term contracts (LTCs) and short term contracts and sales – all of which are offered to an open market. In 2013/14 the proportion was approximately 40:60 LTC to short term contracts and sales. However the impact of *Phytophthora ramorum* and the increasing larch harvest (rising to nearly 30% of all timber production from the estate in the current year) has meant that in 2014/15 these proportions are reversed at 60:40. The increase in LTC offers was to encourage and support the harvesting and processing sectors on as stable a basis as possible. We wrote to timber processors in December 2013 giving notice of the changing future availability of red (eg larch) and white wood (eg spruce) in volume and spatial location across Wales. We have liaised closely with the timber contracting and processing sectors throughout the rapid response phase, our plans for regulatory compliance and the management of a significant tree disease through the implementation of the Larch Reduction Plan for the WGWE (see section 5.5). We provided the timber trade (including private growers) at the earliest opportunity with a timber production plan to 2021 to inform their own business planning. Through the use of long term contracts we have encouraged private investment that will ensure best value for larch for all growers in Wales.

The year 2013/14 was an incredibly challenging year for forest managers, not only in managing tree disease, but it was also the wettest year on record and Wales experienced successive Atlantic storms. 80% of *Phytophthora ramorum* infected woodland is part of the WGWE. Despite this we exceeded our Business Plan targets for timber volume by nearly 70,000m³ and predicted income by £400,000.

3.4.3 Timber sales

Principal sales methods and rationale are described in the Timber Marketing Strategy. Timber is offered on a regular basis to the open market through two methods described as Standing Sales or Direct Production sales. Both sales methods are in demand by processors across Wales and both offer benefits to the industry and ourselves as part of the sustainable forest management of the WGWE.

Sales are conducted either through long term contract agreements or through offering short term contracts via an electronic tender system. Long term contract agreements are entered into through open market competitive sale processes and are designed to ensure that there are positive outcomes for all parties and to support all areas of the timber sector where possible. This could be through investment in processing capacity, improvement of health and safety standards, contractual requirement to support apprenticeships, adding value to end products and development of niche markets for minor species. Open market sales are offered through advertised sale events and lots are offered for both standing and roadside parcels. The system (E-Sales) is an internet based tender sale with all the relevant documentation made available on-line.

Through the Timber Marketing Strategy, regular customer contact and the annual customer liaison meeting the sector is informed when timber volume is expected to come to the market. We currently publish the average prices from sales events on the Forestry Commission website together with price trend information from roadside and standing sales through a series of indices. Due to commercial confidentiality only sales with three or more bids are included in the figures published by us. The indices aim to show long term trends and do not represent the actual prices received for individual sales lots. Timber

prices achieved from the public forest estate in Wales are broadly comparable to those achieved in England and Scotland.

We are committed to revising the current approach to publishing timber prices so that the data is more meaningful to others. We have recently proposed that the current review of timber marketing together with the timber trade statistics group could be a mechanism to take this forward. As always confidentiality is a major consideration and any change in publishing price for our timber would need to carry the support of the whole sector.

Prices and lot content can vary significantly from one sale point to another reflecting the diverse nature of tree stands and the nature of managing a public forest estate for multi-purpose objectives. Factors affecting timber prices include tree size, site terrain, mix of thinning against clearfell programmes and proximity to market. Broader economic factors influence timber prices and the consumption of wood products such as house building and manufacturing industry performance, energy prices and currency trends. The improving economic climate has seen an increase in timber prices over the last two years but markets are still expected to remain volatile and challenging for the foreseeable future.

A consequence of increasing the production and marketing of *Phytophthora ramorum* infected larch has, despite a rising trend in timber prices, resulted in a reduction of income from timber sales from the public forest estate. **Table 1** demonstrates the financial impact year on year of increasing the percentage of larch in our timber harvesting programme. Wales has dealt with a significantly larger scale and rapid response to the disease since 2010/11 than the rest of the UK and accounts for country distortion in achieved timber prices. Further evidence is given in section 5.

Table 1 Larch within harvesting programme and income

Period	Larch as % of programme	% reduction in total income
2010/11	6.29	1.92
2011/12	15.29	4.62
2012/13	13.43	3.98
2013/14	19.84	6.25
2014/15	29.48	8.95

3.5 Increasing the diversity and resilience of WGWE

3.5.1 Measures to improve woodland resilience

Managing a more diverse WGWE will help make it more resilient to the impacts of climate change, in particular the risk from pests and pathogens, but also as a mechanism to achieve the balance of multi-purpose objectives sought in the Woodland Strategy that are appropriate to people and place locally described within FDPs. There are three main management measures to secure greater resilience: improving tree species choice, using alternatives to clearfell where possible and adopting a sound approach to genetic diversity and conservation. The outbreaks of *Phytophthora ramorum* in larch and *Chalara fraxinea* in ash show the danger of reliance on a few species. UK wood production remains reliant on softwood (95% coniferous) with hardwood just 5% and we are investing in research to improve our knowledge of the growth performance and timber properties of this broader range of species which will be a part of the long term production forecast. Increasing the structural diversity of the WGWE is a necessarily long term process and we are reducing

the area managed by clearfelling and increasing the proportion being transformed to continuous cover systems. We are working with Welsh Government to develop Wales' approach to genetic conservation and diversity in the Welsh Forest Resource.

3.5.2 Replanting and establishment programme

In the previous decade seven different species of conifers were planted with Sitka spruce accounting for nearly 60%. By 2016, we will be replanting with 16 different species of conifer of which 20% will be Sitka spruce. 26% of the total will be species of conifer that would have been traditionally considered 'alternative species'. Approximately 28% of replanted trees will be broadleaves in addition to the area of broadleaved woodland established under natural regeneration. The ability to diversify is somewhat limited by factors such as soils, terrain, elevation, exposure, management history and tree species suitability under predicted climatic changes. In our management of the WGWE we are following a predicted forest types approach which matches suitable species to the specific site and are encouraging other woodland owners and managers to do the same.

The budgeted replanting programme of 1350 hectares was completed by the end of March 2014, with an additional 55 hectares of land felled due to *Phytophthora ramorum* completed, within budgeted funds, to take the actual completed replanting programme to 1405 hectares. Some 3.4 million trees of 37 different species (twice the variety planted a decade ago) were planted by contractors able to take full advantage of the favourable weather conditions during the planting season. The main species planted continues to be Sitka spruce (39%), followed by Douglas fir (14%), Norway spruce (11%), Serbian spruce (6%) and oak (6%) and includes species such as cherry, lime and western red cedar. Our seed liaison group continue to work closely with growers to identify and collect seed in order to meet projected programmes and address any shortfalls in supply.

5515 hectares of stands under five years old were surveyed and selective control measures for weeds, insects and mammals were put in place to ensure successful establishment.

Plantations on Ancient Woodland Sites that have been clearfelled because of tree disease, i.e. *Phytophthora ramorum* in larch, are, subject to funding, to be restocked with the objective of protecting ancient woodland characteristics and restoring native tree canopy cover.

3.6 Renewable Energy Programme

3.6.1 Wind energy

The wind energy programme on the WGWE is projected to deliver 83% of the WG onshore wind energy target⁹. Our staff manage the programme on behalf of Welsh Government utilising and further developing valuable skill sets. Planned delivery of all wind energy projects are on target with the relevant corporate dashboard targets being met for the period. Each project is at a different stage of development. Brechfa Forest East (36MW) and Brechfa Forest West (84MW) have been granted planning consent, Clocaenog Forest (96MW) due Ministerial determination and planning application is expected to be submitted for Dyfnant Forest (116MW) later in the year. Strategic Search Area E Pontardawe has no option agreement but has been kept in reserve as a potential Community Development – something which was identified and conveyed in the Ministerial Submission required to

⁹ Feb 2013 from <http://www.forestry.gov.uk/forestry/INFD-8JTE8F>

authorise the termination transaction. The Nant y Moch project (155MW) is currently subject to review and SSE Renewables are working with us to establish the best possible way forward.

The most advanced site is Pen y Cymoedd (228MW installed capacity). In February 2014, we delivered the agreed tree clearance programme to the developer, Vattenfall UK, and construction of the compound and associated infrastructure has begun. Construction of the 'Blade' mountain bike mitigation route was undertaken between July and December 2013 and the route opened in February 2014 in Afan Forest Park. Environmental mitigation of £3M is now being addressed with the establishment of the Ecological Steering Group which will advise on the delivery of the Habitat Management Plan and associated expenditure. Pen y Cymoedd is expected to save between 4 and 9.5MtCO₂¹⁰ over its 25 year lifespan¹¹.

The wind energy programme operates with a number of important principles from the Woodland Strategy including where permanent removal of woodland is permitted then an equivalent area of woodland will be created in Wales funded by the developers and the programme.

3.6.2 Small Scale Hydro Power

The Small Scale Hydro Power Programme was commissioned by WG to investigate and deliver opportunities for the development of such schemes on the WGWE. The Programme received 302 expressions of interest on 240 sites and is now considering 172 schemes in three tranches between April 2013 and December 2017. The four year programme has worked closely with developers to ensure compliance with our water abstraction policy. Based on half of schemes being built or completed this programme is expected to save 79KtCO₂ annually¹². This programme has stimulated the creation of small and medium sized enterprises and is a good example of public investment (and the use of public land) to pump-prime interest, technological development and the growth of support services for renewables in the wider economy.

3.6.3 Third Party Access for Energy Programme and Wood Energy Business Scheme

There are four access agreements across the WGWE to operational wind energy schemes developed off the public forest estate.

Wood Energy Business Scheme (WEBS) is an EU funded scheme which provides capital grant support to businesses for woodfuel heating systems and processing equipment. 70 offers were made to applicants with 59 projects completed. The scheme is closed to new applicants but will continue to run until March 2015 as there are three potential grants to be finalised. This programme is calculated to save over 2KtCO₂ annually and within the lifespan of the funded scheme by a total of 6.47KtCO₂¹³. The scheme provided applicants the opportunity to identify supply volume from the WGWE – an example of the flexibility of public land ownership to stimulate new enterprise.

¹⁰ carbon savings calculated by comparing loss from site development while displacing electricity generated from the UK fossil fuel or grid mix

¹¹ Pen y Cymoedd Environmental Statement, non-technical summary

¹² Natural Resources Wales May 2014 unpublished figures

¹³ Jeffreys, M. Submitted as part of Independent End of Project Review to WEFO

3.7 Delivery of the social agenda

3.7.1 Strategy and priority delivery

Our Recreation and Access Strategic Statement 2014 – 2015¹⁴ sets out how we provide opportunities within and facilitate the use of the public forest estate by others and how we work with others to facilitate and promote recreation and access across Wales. The content was developed from internal events workshops and external workshops during the development of the Corporate Plan.

We have continued to develop opportunities for access provision within the public forest estate. High priority has been given to the development and improvement of recreation and access provision in and around Afan and Cwmcarn visitor centres - areas that have been significantly affected by large scale clearfelling to control *Phytophthora ramorum*. Redevelopment of the sites will encourage new and repeat visitors, providing continued access opportunities whilst forestry operations are ongoing. The nearby Vattenfall UK wind energy programme has provided mitigation in the form of new mountain bike trails in Afan.

At our Coed y Brenin site 11km of new trails have been built. Four new running trails have been developed using guidance from Welsh Athletics, which cater for a growing market. A new trail running outlet (retail and advisory) has been leased to support this new market. End of year visitor and job creation figures for 13/14 will be available for the oral evidence session but at the time of writing 51500 extra visitors have visited this site along with the creation of 5.75 jobs¹⁵.

A new play area, including natural play area, has been developed and launched at Moel Famau in North East Wales – the first of its kind in the public forest estate. The play area encourages children and young people to venture out into the woodland, away from the more usual built play area, building their confidence and motor skills through play and exploration.

3.7.2 Engagement with the public

Building on the Forestry Commission and Natural Resources Wales' established approach¹⁶ and high emphasis on the management of health and safety within forest operations we have developed specific guidance for areas of high public use. Forest management operations are essential to the provision, development and maintenance of well-managed, safe and welcoming woodlands for recreation, access and other community activity. This guidance will provide information to the public on the 'when', 'why' and 'what' of our forest operations and other major works including forest road construction. Developed in partnership and consultation with our specialist operational staff the guidance was piloted in Coed y Cymoedd in South Wales last year and will be rolled out across woodlands managed by us in 2014 in line with UKWAS recommendations. The guidance is being extended to cover informing and consulting the public about Forest Resource Plans. This will involve stakeholder and spatial analysis to ensure that engagement resources are focussed on those communities and groups with a direct

¹⁴ In preparation - due at Natural Resources Wales Board 14th May.

¹⁵ Unpublished Natural Resources Wales part-year figures submitted to WEFO. End of year figures being finalised at time of writing.

¹⁶ For example Forestry Commission Practice Note – Managing Public Safety on Harvesting Sites, revised November 2012 - provides guidance for landowners, forest managers and forestry practitioners when discharging their duty of care to the public on forest operation sites together with information and advice on suitable control measures and illustrates good practice through the use of scenarios.

interest in high use woodlands. We can consult about 'how' and 'when' operations are carried out and we can inform about given factors which dictate tree species choice and forest resource plans (the 'what' and 'why') such as soils, terrain, elevation, exposure and management history.

3.7.3 'Woodlands and You'

Through the *Woodlands and You* scheme we encourage and facilitates use of the WGWE for a range of community and enterprise benefits. The woodlands we manage can be used for training and enterprise ventures, health and well-being initiatives, arts and community regeneration programmes, activities and events of all kinds. Over 900 permissions and agreements were put in place in 2012/13 and although the figures for 13/14 are still being prepared there is an upward trend. Both the WG and Natural Resources Wales want communities and social enterprises to get the greatest possible benefit from the WGWE. A monitoring and evaluation toolkit and process have been developed and implemented to ensure that we provide the best possible service to applicants. The scheme is currently being developed and extended to include all land owned and managed by us

4.0 Delivery of business advice and support to the forestry sector in Wales;

4.1 Introduction

We discharge our duties and functions according to the parameters of its Establishment and Functions Orders. In our management of the Public Forest Estate we are able to deliver against broader WG priorities such as green growth (providing opportunities for enterprise), healthy activity (provision of recreation and access); green energy (renewable energy programme, sale of biomass); tackling poverty (channelling benefits to most disadvantaged groups and communities) illustrated in **annex 3** and described in section 3.7 and 4.3.8.

An often undervalued aspect of direct management of a public forest estate is the experience of our staff and making these valuable professional forestry skill sets transferable to the broader discharge of our powers, duties and functions. Using applied research to influence how others plan and manage their land is a key part of our business. We continued to administer new Glastir Woodland Creation grants until 31st December 2013. In addition to our capacity as regulator for forestry issues and woodland grants, we continue to provide advice and support to secure the change needed for a resilient forest sector and the continual development of Sustainable Forest Management best practice.

In this section we describe our: regulation of forestry issues; examples since April 2013 of technical advice and guidance to support regulatory compliance and best practice including investment in forestry research; and, how we engage with our key external stakeholders in the forestry sector and those interested in it.

4.2 Regulation

4.2.1 Forestry issues

As the regulator for forestry issues, we are responsible for issuing felling licences and Statutory Plant Health Notices (SPHN), and for the administration of Environmental Impact Assessments and open access restrictions and exclusions for forestry. It is responsible for these issues on the WGWE as well as the private sector. Generally, with the exception of SPHNs (to implement the WGs Disease Management Strategy for *Phytophthora*

ramorum), there has been no significant change to forestry regulatory activities since April 2013.

Since vesting the following have been issued¹⁷ (not exclusive to WGWE):

Open access restrictions and exclusions	134
Felling licences	350
EIA (forestry) determinations	46
SPHN (which includes the rescinded & new SPHNs following WGs Disease Management Strategy for <i>Phytophthora ramorum</i>)	471

We are responsible for dealing with alleged illegal felling cases and in 2013/14 responded to 80 cases of which five were investigated as Cases to Answer. We are also responsible for reclaiming grants where work has not been completed or is unsatisfactory. Since April 2013 two new reclaims have been pursued. These do not involve Natural Resources Wales' management of the WGWE.

4.2.2 Woodland grants

During the year we approved 178 Glastir Woodland Creation contract applications of which 89 required consultation to be undertaken. Glastir Woodland Management has been administered by Welsh Government since inception as has Glastir Woodland Creation since 2014. We will continue to manage Better Woodlands for Wales and Glastir Woodland Creation legacy grants for as long as Welsh Government remit us to do so – with final payments made in 2022. We continue to advise on the development and implementation of the Glastir Woodland Element.

4.3 Technical advice, guidance and research

4.3.1 Water quality - water management plans for WGWE

As part of our response to recent pollution incidents we have strengthened our procedures to manage the risk to water quality from forest operations with a focus on the risk of sediment entering water catchments. Awareness raising sessions for forest operations staff, including contractors, was carried out in late 2013 with further sessions planned for this year. Contractors are often a shared resource between public and private forest managers and our investment will help to improve standards for all.

4.3.2 Water quality - training for the private sector in forest regulations and controlling diffuse pollution

We provided training for UPM Tilhill contractors to raise awareness to issues relating to forest regulations (EIAs and felling licences) and managing operations to prevent siltation of water courses during forest operations.

4.3.3 Water quality - managing forests in acid sensitive catchments

A Forestry Commission practice guide (part of the UK Forest Standard suite of best practice) is to be published shortly on the management of forests in acid sensitive areas. We have produced and informed the forest sector about our implementation guide for Wales and until 30 Sept 2015 will provide a service to the private sector and Glastir Managers to help them implement the guidance.

¹⁷ Figures as at April 2014

4.3.4 Reducing our use of chemicals - cypermethrin and the alternatives for pine weevil control and plant protection

Pine weevils are a major threat to newly planted trees and can cause up to 100% losses if population control is not undertaken. We continue to work with Forest Research, Forestry Commission, growers and forest owners and managers to secure effective alternatives to cypermethrin as part of a wider chemical reduction strategy¹⁸. We already use a number of alternatives including biological control using nematodes which kill the weevils. We have continued to contribute to the £500,000 that has been spent since 2010 on research into alternatives suitable for British forestry. We are undertaking a review of the use of alpha-cypermethrin and cypermethrin on the WGWE and will provide short-term actions, a medium term plan and long term framework for the control of damage due to pine weevils.

4.3.5 Tree Health awareness

In conjunction with Forest Research, We held two tree health seminars on *Chalara fraxinea* (dieback of ash) in May 2013 and a further two on *Phytophthora ramorum* and other pests and pathogens in June 2013. These were open to the private sector and were attended by 200 participants.

4.3.6 Natural approaches to flood risk management – the role of trees

We have commissioned Forest Research to provide GIS spatial datasets and maps which identify priority areas for woodland creation and improved management of existing woodlands to benefit flood risk management in the three pilot catchments targeted by the Natural Resources Planning process; the Rhondda, Tawe and Dyfi catchments. The findings of which will be considered for use across Wales and will be shared with our Flood Risk Management staff.

4.3.7 Short rotation forestry

We have commissioned Forest Research to work with our Wales Silvicultural Operations team to establish short rotation forestry trials on the WGWE. Short Rotation Forestry seeks to address the (increasing) demand for biomass through a management system which can sustainably produce a renewable source of fuel in a relatively short time-frame (8 to 20 years). A range of tree species are in trial. This has not been previously tested in Wales and will contribute to an aim of the Woodland Strategy which was set out in the associated Action Plan: '*Develop an approach to short rotation forestry in Wales and provide guidance to owners and managers.*'

4.3.8 Education, skills and work experience

The WGWE offers an ideal setting for outdoor learning opportunities which could form an extension to learning for our schools but also increases the capacity for small and medium sized enterprises by providing settings or transfer of expertise to improve outdoor learning skills sets in Wales and beyond. Our forestry education team delivered over 800 visits for approximately 19,000 students and 3000 accompanying adults. In addition the team provided training events for 260 teachers and supported the Forest School training network. We continued to facilitate Outdoor Learning Wales (formerly known as Forest Education Initiative) supporting 21 groups to share best practice and build capacity.

¹⁸ Willoughby et al, Forestry Commission Practice Guide - Reducing pesticide use in Forestry, 2004, Forestry Commission. Operational Guidance Booklet 15 (for FC [& NRW] staff) – Using Chemicals in the Forest

We have set up the Cyfle placement scheme to support work placements and provide opportunities for skills training. In the first year 65 work experience placements were made in offices which have a forestry focus giving students the opportunity to find out more about this aspect of our work.

Within our harvesting Long Term Contracts we have added social procurement clauses to support apprenticeships and at least three have been supported since April 2013.

4.3.9 The value of tree planting in our urban areas

Wales is the first country in the world to complete a survey of canopy cover in all its urban areas. Full details and the benefits that flow from trees in urban areas are set out in the *Tree Cover in Wales' Towns and Cities'*¹⁹. The study provides an evidence base to help a range of key groups and organisations - from community tree interest groups to urban planners and decision-makers in local authorities and national government - to plan and manage our urban tree resource in a better way. Aerial photography analysis showed that urban tree canopy in Wales was 16.8% in 2009 (mid-range in world rankings) with 55 of our 220 towns showing an overall decline in canopy cover between 2006 and 2009. We are committed to working with colleagues in the Welsh Government and in public, third and private sector organisations throughout Wales, to support and build on this work and promote a strategic approach to managing our urban trees.

In summer 2013, we worked in partnership with Wrexham County Borough Council and Forest Research to complete a survey of the trees in Wrexham County Borough using i-Tree Eco, a model developed by the US Forest Service. The ecosystems services provided by Wrexham County Borough's urban trees were valued at more than £1.7 million a year. Alongside the iTree Eco project, a three year research project has been commissioned by a partnership group with representation from Natural Resources Wales, the Welsh Government, Forest Research and Wrexham County Borough Council to assess the policy and wider attitudes towards and impacts of the survey on Wrexham's urban forest over time.

4.4 Liaison with the forest sector

We lead, facilitate and participate in many fora where the forestry sector are considered and /or represented (section 3.4.1 describes timber trade liaison). We also hold bespoke seminars and meetings to discuss topics or disseminate information such as 'forests, fisheries and water' held in March 2014. 45 attendees from relevant sectors came to hear specialists in their field and discuss the sustainable management of forests, inland fisheries and water catchment management.

The Wales Land Management Forum was established in May 2013 to act as the main communication route between the Board and Executive Team of Natural Resources Wales and elected office holders from the principal land management organisations in Wales. The forum provides a mechanism to share information, identify areas of common ground and develop a 'no surprises' approach to strategic issues. The Forum currently includes representatives from Confor, the farming unions and land management and owners organisations but will be refreshing its Terms of Reference and membership and is looking to expand its forest sector representation.

¹⁹ Natural Resources Wales *Tree Cover in Wales' Towns and Cities'* May 2014, Natural Resources Wales - full copy and summary available from our website

5.0 Management of disease outbreaks on the public forest estate;

5.1 Introduction

Tree Health has become an increasingly serious issue in the UK in recent years as climate change and in particular, unseasonal weather patterns, have made trees more susceptible to fungal diseases which often thrive in warm, moist conditions whilst increased global movement of goods has resulted in more rapid movement of both pests and pathogens between countries.

There are several diseases that are of particular importance in Wales. A fungal disease called *Dothistroma*, often referred to as Red Band Needle Blight (RBNB,) has been affecting pine species, in particular Corsican pine since the late 1990s. It is a chronic, defoliating disease but one that can be mitigated by thinning to increase air flow and reduce humidity in the tree canopy. *Chalara* disease is a more virulent fungal disease in ash trees which causes dieback and can lead to death often from other diseases which take advantage of its weakened state. It was first found in the UK in 2012 and is now present on a number of sites in Wales, there is little prospect of preventing its gradual spread in the absence of research findings. However, the disease that has had the greatest impact on forests in Wales in recent years is *Phytophthora ramorum* of larch.

In this section we concentrate on our management of *Phytophthora ramorum* of larch since April 2013 but it is important to describe some of the background in our role to detect and respond to the outbreak since its first discovery in Wales in June 2010 in the Afan Valley in South Wales. It is important to note that our roles in relation tree health are not confined to the management of the WGWE.

5.2 Background

Phytophthora ramorum of larch is a fungus-like organism which was first confirmed in the wider environment in Great Britain in 2002 in rhododendrons in ornamental gardens. It was found to be affecting larch trees in 2009 in Devon and Cornwall and then in Wales in June 2010 on the WGWE in South Wales. It is known to affect a wide range of other species of shrubs and trees including beech, sessile oak, Douglas fir and western hemlock. However larch has proved to be a much more susceptible host and the disease can cause very rapid death whereas many of the other species only suffer dieback. There is limited understanding of the behaviour of *Phytophthora ramorum* in larch and the pattern of spread has not followed modelled predictions. When this is coupled with the variability in a range of factors that impact on its spread, such as weather, it is not possible to be certain about how effective interventions will be in controlling the spread.

There are statutory regulations about containing the spread of *Phytophthora ramorum* which are reflected in the management of sites with the disease using Statutory Plant Health Notices (SPHN). The method of spread is via spores which move in moist air. In order to reduce spores and therefore reduce spread the infected material should be cut down. A UK wide Outbreak Management Team (OMT) was established to develop strategies to cover regulation, manage biosecurity and drive research priorities to increase knowledge. In Wales all initial responses including management were guided by Forestry Commission Plant Health and the OMT.

5.3 Tree Health policy

Responsibility for Tree Health within the UK has changed. Prior to April 2013, responsibility for Tree Health lay with the Forestry Commissioners and was discharged solely by the Forestry Commission. In Wales Natural Resources Wales and the Forestry Commissioners are jointly responsible for the delivery of the Welsh Ministers' tree health function. This includes the responsibility for issuing Statutory Plant Health Notices (SPHNs) or their equivalent. We are a member of the Wales Tree Health Steering Group which was established by WG in July 2013. The Steering Group manages the delivery of the Wales Tree Health Strategy (including the regulation of *Phytophthora ramorum* in larch).

5.4 The spread of *Phytophthora ramorum* in Wales and strategy development

Since first detection in 2010 the infection became established and spread rapidly in the larch on the public forest estate in South Wales where it was planted in extensive areas on slopes. There has been a more gradual spread into the relatively few private woodlands in the South Wales valleys where larch was generally planted in smaller, more dispersed areas. In spring 2013, it was found that the disease had rapidly spread with an additional 3200 hectares of larch being infected. In 2013, the total infected area increased to over 6500 hectares (around 30% of the larch in Wales) – **table 2**. The spread of *Phytophthora ramorum* in Wales is not dissimilar to the recent spread in other western upland areas of Great Britain, in particular, western Scotland and Cumbria. In fact the disease is now becoming endemic on the western margin of the British Isles where there are similar climatic conditions (**annex 4**).

In December 2013, the *Phytophthora ramorum* Disease Management Strategy (DMS) for Wales was introduced by the WG. This recognises that the previous UK strategy of containment had not been effective and efforts to control of the spread of *Phytophthora ramorum* need to be focussed on the edge of the infection and in any outlying infection, (and that there is little benefit in seeking to control spread in areas where there are already high levels of infection). The strategy will be reviewed at 6 monthly intervals with the first review taking place in June 2014. As regulator for forestry matters we have issued over 470 SPHNs including handling of rescinded notices following the changed approach on agreement of the *Phytophthora ramorum* Disease Management Strategy.

The strategy divides Wales into two zones:

- a core disease zone (CDZ) where there are high levels of infections in contiguous areas of larch (little scope to slow down the infection, or where the felling of infected areas would have a significant adverse environmental or social impact); and,
- a disease limitation zone (DLZ) which has no or limited infection levels (and where there is scope to implement disease control which would help to slow down the spread).

The requirement to fell trees is focussed on the boundary of the control zone and the wider limitation zone. SPHNs do not apply within the CDZ.

Table 2 – The spread of *Phytophthora ramorum* across Wales

Year	Areas of new infection (in hectares)		
	Total Area	Public Forest Estate	Private Forest Estate
2010	831.6ha	819.0ha	12.6ha
2011	745.7ha	463.8ha	281.9ha
2012	1313.8ha	1118.1ha	195.7ha

2013	3712.0ha	2984.5ha	727.5ha
Cumulative total area	6603.1ha	5385.4ha	1217.6Ha
Total area of larch before P ramorum (NIWT 2002)		12000ha	10122Ha

5.5 Management response to *Phytophthora ramorum* in larch on the WGWE

Forestry Commission Wales responded to the original infections in the South Wales valleys in 2010 by undertaking extensive felling of infected larch. The timber markets could not absorb large quantities of infected larch and so many areas were felled to stump in order to comply with the deadlines in SPHNs but leaving the trees to be extracted and marketed at a later date.

The reduced rate of infection on the public forest estate in 2011 appeared to indicate that this response was having an impact and that FCW would be able to manage the infection by substituting infected larch into the existing timber marketing programme.

However, once the scale of the increased infection in 2012 was known, it became clear that FCW would need to increase the size of the larch programme in order to address *Phytophthora ramorum* effectively. However, it was also becoming increasingly clear that the large scale, rapid felling of infected areas in the South Wales valleys was resulting in significant local environmental and social impacts. This was especially so in places where large areas of larch are near to communities and where trees have been felled but left on the ground for subsequent extraction and marketing. The felled trees were very unsightly in the landscape and often blocked walking and cycling trails. They also presented a potential long-term fire hazard if left un-cleared. The felling had a major impact on the amenity and recreational value of the forests for local communities and visitors. Tourism related business such as mountain biking centres and accommodation providers were very badly affected as visitor numbers plummeted.

It was clear that the management of *Phytophthora ramorum* infection on the WGWE could not be done sustainably without taking into account the impacts, risks and costs. From 2012 onwards, management has sought to move away from felling to stump as a means of disease control and instead to develop an alternative and more sustainable approach. A longer term approach was needed in order to remove and replace the larch in a way that minimised the adverse environmental, social and economic impacts of the change.

In 2012, based on research advice that *Phytophthora ramorum* was likely to affect all stands of larch in Wales in the medium term, FCW developed an outline programme to reduce the larch on the WGWE to a low level over a period of 10 years (WGWE Larch Reduction Plan). Given that prior to *Phytophthora ramorum*, there were some 2.5M cubic metres of larch timber on the WGWE, this equated to increasing the programme to around 220,000 cubic metres / year by 2014/15. This planned approach would enable more effective resource planning and would provide scope to mitigate the impacts.

This approach was regarded by some stakeholders to be draconian and premature. However, the further increase in the rate of infections in 2013 confirmed the need to put in place a programme for the removal of larch from the public forest estate. In order to keep the overall level of production within sustainable limits and to minimize the adverse impacts on timber markets, the amount of non-larch felling was reduced in order to offset much of the increase in larch.

The capacity does not currently exist in the timber processing sector in Wales to harvest the additional volume from steep ground and to process the additional larch timber into higher value products, so it was concluded that FCW / NRW would need to offer Long Term Contracts LTC to secure the necessary commitment and investment. LTCs are part of the Timber Marketing Strategy for the WGWE and have been used successfully in securing investment. The views of the forest industry were first sought about the additional volumes and the use of LTCs for larch in October 2012 and the feed-back is helping to shape the approach going forward.

While the marketing and resource building has been taking place, the Forest Operations units have also continued to implement the existing programme of operations. To date well over a 2000ha of infected larch areas have been felled. The majority of these have now been cleared and some 450,000 cubic metres of infected timber has been harvested from the WGWE and supplied to timber processors.

5.6 Future developments

Since June 2013, we have had extensive discussions with the Welsh Government about the options and resource implications for dealing with *Phytophthora ramorum* and costed options were developed for different approaches. The net cost of the Sustainable Restructuring Programme on the WGWE was assessed at £50M over the next 10 years. The biggest element of the programme was the cost of replanting the increased felled areas with a more diverse range of tree species to improve resilience. The Welsh Government has confirmed funding for 2014/15 of £2.5m for Natural Resources Wales in order to implement a reduced funding option and we are currently planning how to make best use of this funding.

Alongside Forestry Commission Scotland, Forestry Commission England, the Scottish Government, and FERA, we have been working with Defra on the procurement of a scoping study to support the nursery sector in their development of a tree and shrub nursery labelling, accreditation and assurance scheme for Great Britain.

6.0 Progress made by Natural Resources Wales to deliver the recommendations of the Wales Audit Office

We have continued to make good progress on the recommendations made by the Auditor General for Wales on the operations of Forestry Commission Wales and scrutiny of progress is a standing item at the Audit and Risk Assurance Committee. It is important to note that not all of the Wales Audit Office recommendations are directly related to the management of the Public Forest Estate and that it was appropriate to discharge the management response on certain actions post-vesting of Natural Resources Wales.

Of the 17 recommendations, three were discharged prior to vesting and a further nine since April 2013 (**table 3**). Of the four outstanding items:

- A broader piece of work is due to be completed during 2014 relating to procurement and staff use of procurement cards.
- The review of the timber marketing strategy and broader work as described in section 3.4 is on track for completion later in the year.

- Recommendation 9b regarding the assurance of Natural Resources Wales' delivery of benefits is being undertaken on a co-production basis as part of the Welsh Government's sponsorship arrangements.
- Recommendation 7 is being approached as part of our response to 1c and the development of an integrated approach to natural resource management with Welsh Government.

Table 3 - summary of progress against recommendations of the report of the Auditor General for Wales on the Operations of Forestry Commission Wales follow-up report

Recommendations	Action area	Progress at May 2014
Link corporate priorities to local planning, resource allocation & workforce planning.	1a. skills mix assessed & sufficient	Discharged Feb 2014
	1b. Corporate programmes costed and resourced	Discharged Feb 2014
	1c. Local forest district plans updated	Discharged Feb 2014 Also see action 7
Procurement business processes:	2a. review single procurement service	Discharged March 2013
	2b. progress against FCW procurement strategy	Discharged March 2013
	2c. procurement service and use of procurement cards	Due to complete Summer 2014
Risk management processes:	3a. identify opportunities in risk registers	Discharged Sept 2013
	3b. corporate planning & risk management alignment	Due to complete Spring 2014
Managing resources - timber production & forecasting	4a. measuring, evaluating & reporting on success of timber review of marketing strategy	Due to complete Sept 2014
	4b. wider cost-benefit analysis of direct production and standing sales methods – inc. delivery against broader policy outcomes	Discharged Oct 2013 Also see action 4a
	5a. Authorisation of extraction volumes	Discharged March 2013
	5b. spot checks on guidance implementation – assurance procedure	Discharged Feb 2014
	6. Strategy to increase income from non-timber sources & link to broader public policy outcomes (monitor & evaluate)	Discharged Feb 2014

Managing resources – alignment of public forest estate with WG policy priorities	7. Alignment to WG policy objectives: timetable for how WGWE can best contribute	In place and part of broader part of developing Forest Resource Planning process (action 1c) and the development of an Integrated Natural Resource Management approach in conjunction with Welsh Government
Manage change effectively	8. Change management: staff survey, staff engagement & action	Original recommendations discharged Feb 2014 (continues as part of organisational change and development processes)
Continuous improvement review, scrutiny & challenge:	9a. periodic scrutiny of audit recommendations	Discharged Sept 2013 (included as standing item at Audit and Risk Assurance Committee)
	9b. recommendation for WG – assurance on benefit delivery	Discharged. Co-production process with Welsh Government

Two actions (1c & 7) are implicitly linked as local planning of the public forest estate must operate as an integral part of the emerging approach to Integrated Natural Resource Management. We will continue to evolve its strategic, tactical and operational planning and management of the public forest estate for as long as this remains within its remit. We continue to support and advise Welsh Government on their development and implementation of Integrated Natural Resource Management.

As referred to in our summary there are very strong synergies between Sustainable Forest Management and Integrated Natural Resource Management but there are challenges to the continuation of the positive trends:

- a) The timescale over which improvement can be realised – managing forest change is a necessarily long term process;
- b) The resources required to achieve and sustain the delivery of SFM particularly in light of increasing pressure from serious disease outbreaks which present a ‘tipping point’;
- c) Deciding the optimal balance of goods and services to be provided, at what scale, and how and in what context will society have a role and make its choice;
- d) SFM and the provision of balanced service provision flourishes using adaptive management principles yet the provision of single services can have priority due to legal commitments, market forces, place or people;
- e) The full valuation and assessment of market and non-market services that flow from achieving SFM and development of financial mechanisms to support them – and how this interacts with INRM; and,
- f) Taking advantage of new markets and financial mechanisms, understand and act on how this could either support or ‘squeeze out’ the potential achievement of SFM in existing forests and from new woodland creation to increase the flow of multiple benefit services or single woodland-derived services.

INRM requires joined up planning and implementation across land uses and between sectors. People and place are fundamental in meeting Wales' commitments to SFM alongside the maintenance of productive potential and the flow of utilisable timber products. However some of the benefits that policy and society demand may only be realised if difficult trade-offs are dealt with (such as the highly cost-effective role of trees in meeting our carbon abatement targets²⁰ or removing planted woodland from peatlands²¹). Such decisions require strategic clarity if area based Integrated Natural Resource Plans are to be the vehicle for achieving the synergies and reducing harmful trade-offs. The Environment Bill White Paper proposed that Welsh Ministers will publish a Natural Resources Policy every five years that will set out the high-level direction of travel for all natural resources related policy in Wales, including key opportunities, trends and priorities on a national basis. Any refresh of *Woodlands for Wales* is likely to be as part of this wider policy framework and the management of the public forest estate will evolve accordingly.

In managing public land for public benefit there are tensions to resolve such as the priority to increase income from the WGWE whilst stimulating small and medium sized enterprise by 'pump-priming' the demand and supply of locally and sustainably produced wood products from Wales. In our work beyond the WGWE there are large areas of unmanaged woodlands that could improve the resilience of farm businesses and support growth in small, local businesses and we have a role in supporting such activity.

It is vital that we learn from the Sustainable Forest Management approach, that our emerging approaches do not undermine all that has been achieved and continues to build on the positive progress that has been made. We will continue to integrate Sustainable Forest Management into our overall approach so that there is cohesion between initiatives that match Wales' overall aspirations for Integrated Natural Resource Management.

Natural Resources Wales
May 2014

²⁰ Read, DJ et al (2009) *Combating climate change – a role for UK forests*. The Stationary Office, Cambridge

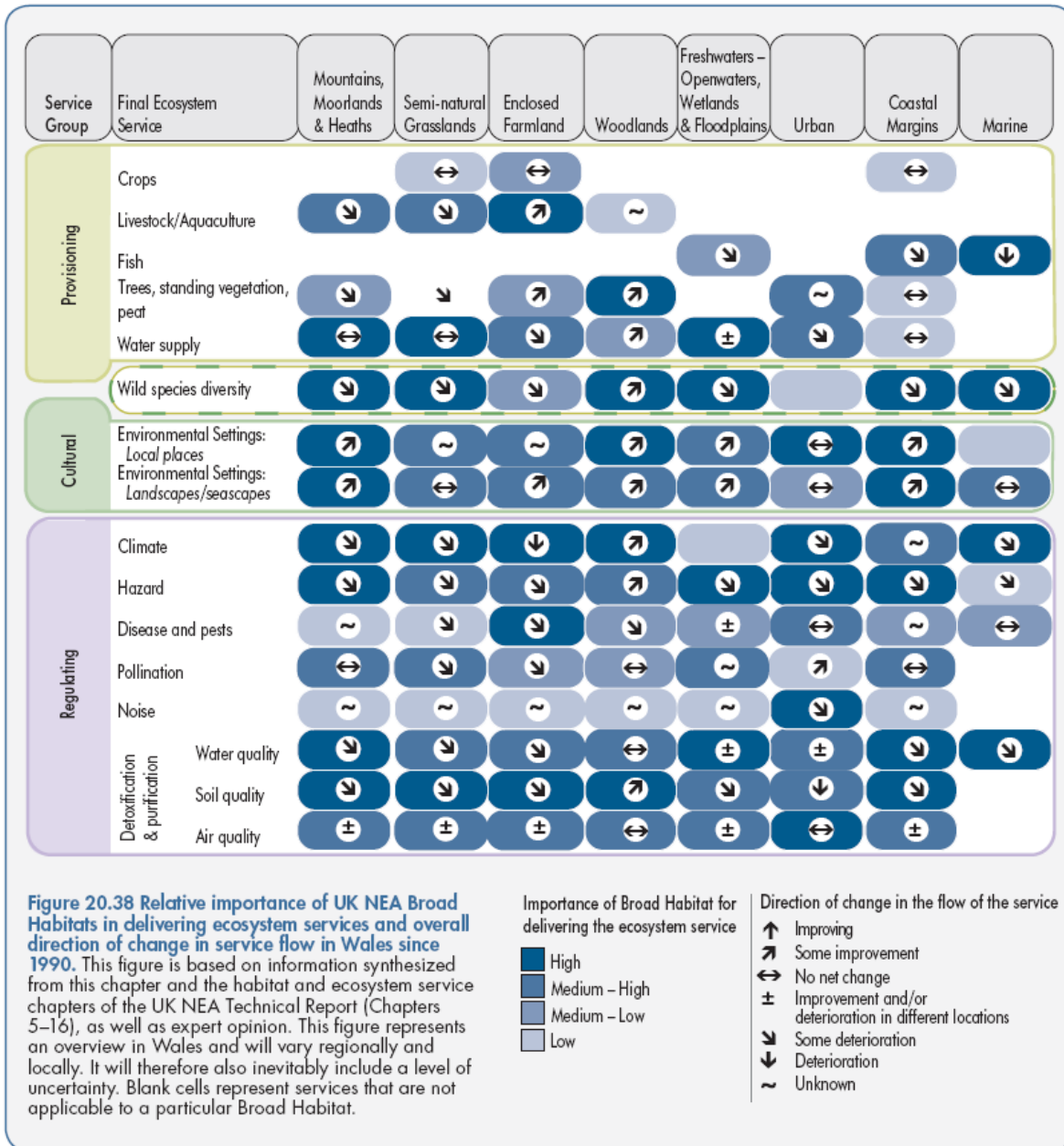
Valetin and Saraev (2012) *Natural Environment Framework: woodland creation case study* Forest Research

²¹ Vangelova et al (2012) *Strategic assessment of the afforested peat resource in Wales*. Forest Research

Annex 1

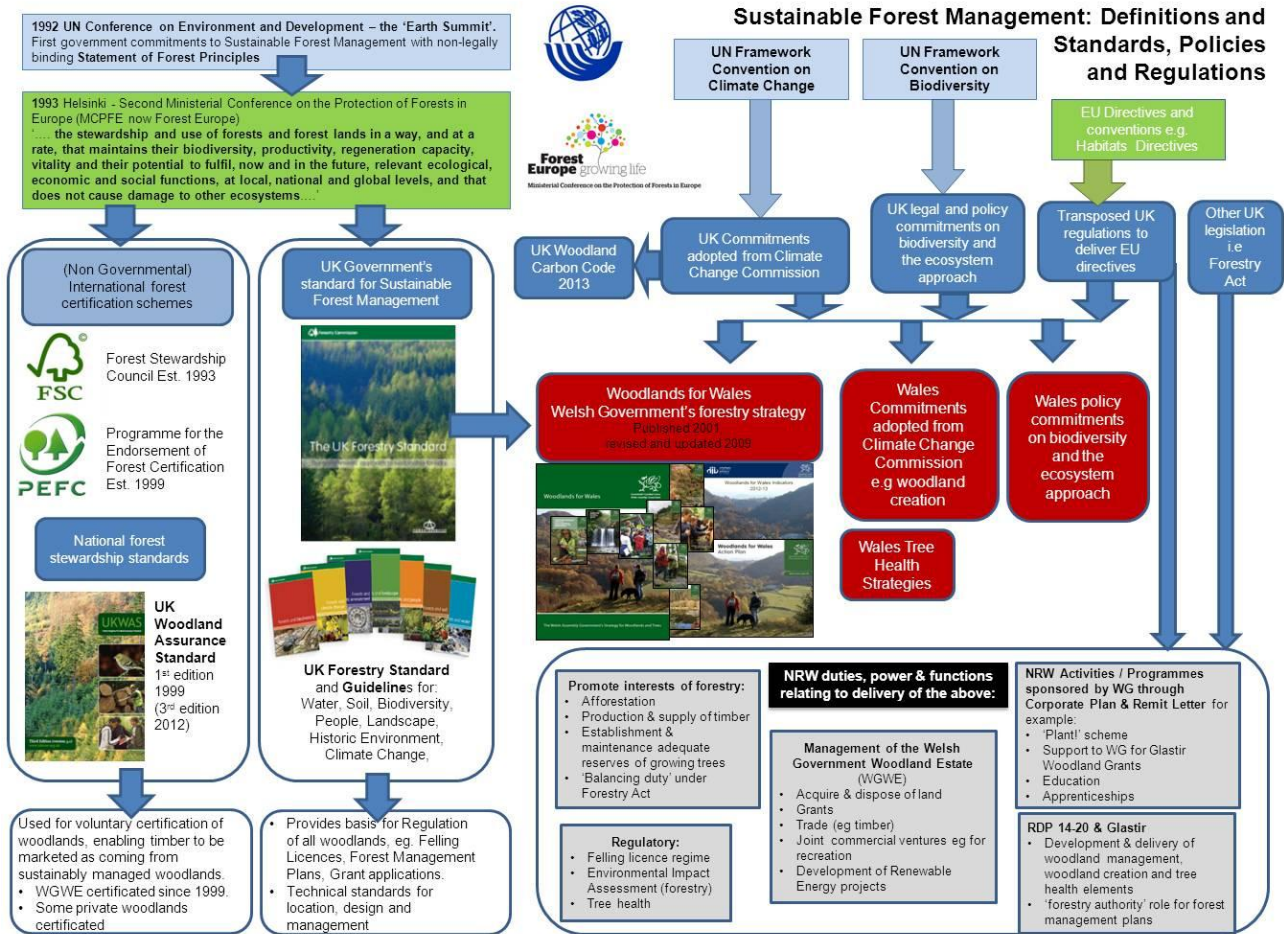
Relative importance of UK NEA Broad Habitats in delivering ecosystem services and overall direction of change in service flow in Wales since 1990.

From UK National Ecosystem Assessment (2011) *The UK National Ecosystem Assessment Technical Report* UNEP-WCMC, Cambridge p1029



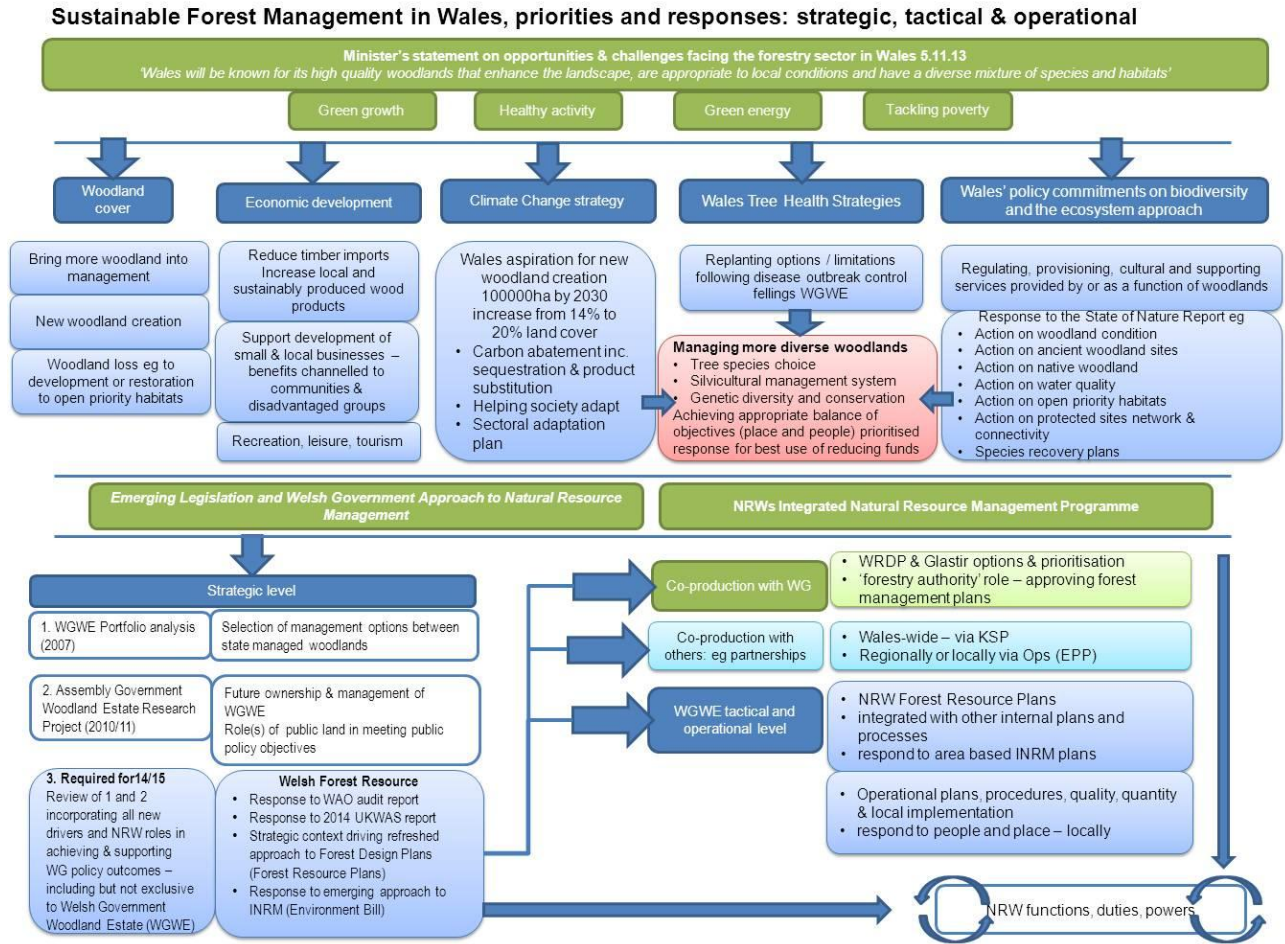
Annex 2

Sustainable Forest Management: Definitions and Standards, Policies and Regulations



Annex 3

Sustainable Forest Management in Wales, priorities and responses: strategic, tactical & operational



Annex 4

Climatic susceptibility to *Phytophthora ramorum*

