



FORESTRY COMMISSION
Description of the Research Project or Services

1.	Research Purchasing Manager (C&FS)	Sallie Bailey
	Relevant PAG	Ecosystems & Biodiversity

2.	Name of FR Programme	Programme: Gene, species and habitat conservation PgM Joan Cottrell
	Manager (PgM) or Project Manager (PM) and staff	PM Ralph Harmer, Colin Edwards, Russell Anderson, Steve Hendry Staff Andrea Kiewitt
	Name of Institution/company	FR
	Official address	Alice Holt Lodge, Wrecclesham Farnham Surrey, GU10 4LH
	Telephone No.	
	e-mail address	Joan.Cottrell@Forestry.gsi.gov.uk
	Programme Life (years)	2 Years – plus 2 years in which ‘essential work’ is incorporated in other programmes
	Start Date	1st April 2011
	Completion Date	31st March 2015
	Revision Dates	31st March 2012/2013/2014

3. Title of Research Project or Service

Habitat Management

4. Abstract of proposed research (Summary to be used on website/FRCC etc) (200 words)

Habitats (as ecosystems), together with genes and species, are key components of biodiversity. Management of habitats provides a means of conserving biodiversity and ensuring the maintenance of a flow of services from which humans benefit. The importance of habitats is acknowledged through regulation and in guidance over sustainable forest management. Silvicultural or habitat management systems manipulate ecological processes to achieve a range of different objectives which influence the conservation and enhancement of biodiversity and the basket of ecosystem services that are provided.

Past work within this programme has focussed upon the restoration of Plantations on Ancient Woodland Sites (PAWS), the restoration of open ground habitats (especially peatlands), the management and restoration of priority native woodlands (especially native Scots pine and oak), and the development of habitat in new native woodland plantings. As a consequence of the reduction in funding in this area, this programme will focus upon the writing up and conclusion of past work on these themes. Some work deemed to be essential, and some of the skills acquired during the past work, will be continued within the Land Use and Ecosystem Services programme and the Genes, Species and Habitat conservation programme.



5. Aims and objectives (word limit 500)

5.1 Aim of the research

This programme aims to capitalise upon past investments in research on habitat management and draw several strands to an adequate conclusion.
 The research will summarise the development of native woodlands and their constituent communities in response to management; natural regeneration and colonisation, management of PAWS and diversification of plantations; management of priority native woodland (especially Scots pine and oak); peatland restoration; habitat development within new native woodland.

INTERLINKAGES

There are strong linkages between this programme and the following C&FS funded programmes
 Land Use and Ecosystem Services –Landscape genetics
 Vertebrate management – Impact of herbivores upon habitat quality
 Alternative management approaches, and Regeneration and sustainable silviculture – common interests in tree regeneration and impact of habitat structure on establishment

5.2 Work Areas

Please list your work Areas as shown in the table below and show how they further sub-divide. Work Areas should be individually costed and be time bound – see 13. below. Please state key desired outcomes from each work area. First two years should be detailed, the next two in outline. See also Note for this Section below.

The programme has 2 work areas	Note for operational reasons, these work areas have been developed to permit their management within two other CFS programmes
<p>Work area A (Work Area 2 Within Gene, species and habitat conservation proposal)</p>	<p>HABITAT MANAGEMENT AND NATIVE WOODLANDS Ralph Harmer, Colin Edwards, Andrea Kiewitt in collaboration with statisticians and TSU staff Ongoing experiments on PAWS, stand management, non-native species and deadwood dynamics will be brought to a suitable conclusion in order to write reports and aid the assessment of options for the work which will be continued. Manage, assess and complete experiments and surveys, and prepare data for analysis. <u>PAWS</u> - Knowledge exchange - Analyse data and write article on tree regeneration in Corsican pine PAWS, vegetation development in PAWS, and beech PAWS <u>Invasive plants</u> - Knowledge exchange - Write report on potential new invasive non-native plant species and their likely impact on woodland biodiversity. <u>Oak woodland dynamics</u> - Knowledge exchange - Analyse data and write article on oak deadwood dynamics in upland woods, – journal paper / popular article</p>
<p>Work Area B (Work Area 2 Within Land Use and Ecosystem Services proposal)</p>	<p>HABITAT MANAGEMENT AND LAND USE CHOICES Russell Anderson, Steve Hendry in collaboration with statisticians and TSU staff This work area is intended to support policy development and operational decisions about changing wooded landscapes with information about the impact of such changes on ecosystem services – and in particular on habitat quality – thereby providing an evidence base for land use decisions. <u>New woodlands</u> – Summarise results of pilot surveys and monitoring of Scottish Forestry Alliance sites exploring the rate of habitat development and dependency upon environmental and other factors. <u>Restoration of open habitats of high biodiversity value on former plantations</u> Outputs from previous Open Habitats project – completion of practice guide, peatland restoration chapter, and two papers for peer-review)</p>

1. Please indicate which of the FC’s 6 Climate change priority actions this work fits into



Protect what we already have	<input checked="" type="checkbox"/>	Reduce deforestation	<input checked="" type="checkbox"/>
Restore the world's forest cover	<input checked="" type="checkbox"/>	Use wood for energy	<input type="checkbox"/>
Replace other materials with wood	<input type="checkbox"/>	Plan to adapt to our changing climate	<input checked="" type="checkbox"/>

7. Comment on how this research will address Country Strategy needs/targets (175 words)

The FC is committed to the conservation of biodiversity; this is incorporated into policy statements on sustainable forest management (UK Forestry Standard), and all three country strategies. Statutory duties exist for public office holders to 'further' and 'have regard' for biodiversity (Nature Conservation (Scotland) Act, 2004, and Natural Environment and Rural Communities Act, 2006 (Wales and England)).

Habitat management research will support the common aims of the country strategies to expand, restore and enhance woodland habitats by: providing data, information, reports and advice related to improving woodland condition and management practice; increase knowledge to underpin management decisions needed for important species such as UKBAP priority species, European protected species and woodland birds; address current policy priorities such as the restoration of PAWS.

8. Identify and comment on any associated business risk of undertaking/not undertaking the research and how that will be managed

Without the programme FR will not be in a position to improve and revise current guidance, provide advice, and to develop of methods of habitat management in woodlands for a range of biodiversity issues resulting in the continued use of methods that are not necessarily best practice.

There is a risk that inappropriate habitat management results, leading to infringements of domestic and European legislation around conservation of habitats and their constituent species.



9. Research impact (economic, social, or biodiversity)

Who will benefit from this research? This research will assist in the development of policy in the areas of climate change, conservation and landscape management. It will also assist woodland owners, forest managers and grant awarding bodies.
How will they benefit from this research? We will provide them with evidence to underpin the development of informed policies on questions such as: Which improved methods of habitat management will deliver objectives more effectively?
What will be done to ensure that they have the opportunity to benefit from this research? We will hold regular update meetings with our C&FS customer and FC country reps to keep them abreast of current progress. We will discuss with them the implications of our results on current conservation and planting policy. We will ensure that the data are robustly analysed so that conclusions are sound. We will publish the results in peer reviewed journals and will provide information notes to ensure that the industry and policy makers are aware and understand the practical implications of our findings.
Potential for innovation and new markets? There is long-term potential for inclusion of advice on habitat management in decision support systems as they are revised or developed.

10. Communication Strategy

Publications: From WA A – to be confirmed From WA B – Open habitats Practice Guide , Research Note on species colonisation in woodland expansion
Reports: Habitat management Internal report to Sallie Bailey on invasive non-native species
Seminars/conferences: To be confirmed
Decision support systems: Potential for material to be incorporated into HARPPS
Website: Relevant web pages will be updated as work is concluded.
Peer review papers: Habitat management Papers on: regeneration in pine PAWS; vegetation development in PAWS; beech PAWS; oak deadwood dynamics; restoration of peatlands. If time allows these will be revised for publication in popular journals.

11. Under government survey control procedures, Ministerial approval must be sought before statistical surveys of businesses or local authorities can proceed. Please indicate any intention to carry out a survey.

Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
• If yes please give brief details



Forestry Commission Proposal for funding Agreement Number CFS 15-2011-15

12. Details of support agreed or to be sought from funding bodies for project
(including in-kind support)

13. Resources (times and fees) requested from the Forestry Commission



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14. Deliverables and associated costs to Forestry Commission

Work Area number	Output	Year 1				Year 2				Year 3				Year 4				Output Unique Identifier	Total Cost
		Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4		
WA A (=WA 2 in gene, species and habitat conservation proposal)	Habitat management and native woodlands	X	X	X	X	X	X	X	X										
	Manage, assess and complete experiments and surveys, and prepare data for analysis.	x	x	x	x	x	x	x	x										
	Analyse data and write article on tree regeneration in Corsican pine PAWS.				x														
	Analyse data and write article on vegetation development in PAWS.				x														
	Analyse data and write article on beech PAWS.						x												
	Write report on potential new invasive non-native plant species and their likely impact on woodland biodiversity.						x												
	Analyse data and write article on oak deadwood dynamics in upland woods,						x												
WA B (=WA 2 in land use and ecosystem services proposal)	Habitat management and land use choices	X	X	X	X	X	X	X	X										
	New native woodlands summary report					X													
	Establishing New woodlands manuscript for peer review							X											
	Peatland restoration Practice Guide (completion of in train output)				X														
	Peatland restoration Chapter (completion of in train output)						X												
	Peatland restoration peer review paper							X											



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Signed.....Research Provider/HOD Date.....

Signed.....C&FS Advisor Date.....

Proposal Approved

CFS

Date 31st August 2011



15. Agreed Changes

Description of change:	
Signed.....Research Provider	Date.....
Signed.....C&FS	Date.....
Signed.....Research Provider	Date.....
Signed.....C&FS	Date.....
Signed.....Research Provider	Date.....
Signed.....C&FS	Date.....



16. Detailed communications plan:
Year 1
Year 2
Year 3
Year 4