Forest Research

Land Management Networks Project

Work Package 1 Final Report

Landscape Scale Method to Identify and Engage Land Managers

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Research Highlights

Work Package 1 – Identifying Owners (see Work Package 1 Final Report)
- The use of a systematic spatially-referenced method for obtaining woodland management information is feasible and can generate significant data and insight relevant to users at a landscape scale.
- Evidence indicates that full implementation of the proposed method (Stages 1 – 5) can identify ownership and/or management information for between 80 and 90% of woodlands above 5 ha in area.
- Effective implementation of the method will require development of an efficient process of information exchange between users (e.g. Woodland Officers) and support staff (e.g. spatial analysts). This may require software development.
- Effective implementation of the method will require an increase in capacity (skilled staff) to process spatial data – either located in central services or locally.
- The method requires users to have capacity to engage organisations beyond the Forestry Commission in systematic information exchange.
- For effective implementation of the method, the *Customer and Land Database* (CLAD, administered by the RPA & DEFRA) should be utilised more effectively. Currently, perceived data protection concerns override its effective use.

Work Package 2 – Owner Networks and Segments
- Evidence suggests that approximately 80% of woodland owners are linked to the local 'professional' network – through contacts with agents and NGOs, land registration, or via membership of forestry or environmental organisations.
- Forestry agents posses significant information on local managers and management. Literature indicates that forestry professionals (e.g. agents and organisational representatives) are critical actors in management networks – as disseminators of information and providers of advise to decision-makers.
- Some woodland managers are more 'central' to management networks than others. Literature suggests that these 'central' managers have larger than average woodland holdings and actively establish relationships with others.
- Land-managers can be 'segmented' according to their social connectivity. Segments are created by managers' dominant activity (which constructs their social 'world') and interactional drivers (everyday interactions via which knowledge exchange occurs).
- Existing research and experience generated 12 land manager profiles which were grouped into 4 general 'segments': *On-board*; *Tied*; *Ready for (some) change*; *Hard work*.

1. Background

In order to achieve its afforestation and sustainable forest management objectives, the Forestry Commission must engage with private land-managers. This engagement consists of the provision of advice and grant aid, partnership working and regulatory services. However, there is persistent concern that engagement focuses (often repeatedly) on a limited proportion and number of private land-managers. Recent policy developments have led to the need to *expand* the breadth and number of land-managers engaged. In a landscape of fragmented land-ownership and management this high level of engagement with land-managers can be a substantial challenge. Knowledge relating to *who* land-managers are, along with *what* land and *where* they manage, is a particularly significant obstacle. Details of only a limited number (and proportion) of land-managers are known to individual agencies, and many land-managers who cannot or do not want to formally engage with public agencies remain unknown. Further difficulties are encountered in *engaging* with a diverse set of land-managers. Different forms of communication will suit different land-managers, management objectives vary considerably, and managers may already be engaged with established networks and organisations within which knowledge exchange is effective and satisfies their perceived needs.

Previous studies indicated that considerable information regarding the identity of land owners and managers is already held within the records of public and non-governmental organisations. However, accessing these records can be problematic, and studies have commonly advocated closer collaboration between information holding organisations. Having said this, many studies and other processes have focused exclusively on the *identification* of owners and managers which has important drawbacks and limitations. Land-managers can be *engaged* (i.e. communicated with) without identifying them formally (i.e. officially recording names and addresses and other personal data). Messages and information can reach land-managers through their established private and professional social networks – which include families, membership organisations, interaction with neighbours, etc. Knowledge of the structure and membership of these networks is critical if the Forestry Commission and partner organisations are to maximise their effective communication with an increasing number and diversity of land-managers.

This pilot project provides baseline information with which the Forestry Commission can adapt the organisation's practices to achieve wide-scale engagement with woodland managers at a landscape scale. This Interim Report describes progress to date within this pilot project.

Objective:
1. Describe a spatially referenced method via which the Forestry Commission can identify and engage woodland managers, and test this within the Nature Improvement Area landscape.

2. Reviewing Prior Work

The *identification* of land-owners is well established as a barrier to their engagement by both public agencies and researchers (e.g. Mather 1987; Church et al. 2005; Church and Ravenscroft 2008; and review by Lawrence et al. 2010). The Forestry Commission and Forest Research have previously sought methods to overcome this (see for example, Betts and Ellis 2000 and Yeomans et al. 2008 McKearnan and Grose 2007), and several similar processes are currently underway. These studies have provided both a useful methodological starting point for this project and a way in which to review and check the method developed.

Previous studies indicated that considerable information regarding the identity of land owners and managers is already held within the records of public and non-governmental organisations. However, accessing these records can be problematic, and studies have commonly advocated closer collaboration between information holding organisations. Having said this, many studies and other processes (such as that undertaken within the NFI) have a focus on *identification* of owners and managers (as opposed to their *engagement*) which has important drawbacks and limitations. Central to these is the character of the information needed in such studies - namely personal contact and ownership details which can be subject to data protection. Whilst rhetoric around 'data protection' is often used by stakeholders to resist the provision of contact details, clearly there is a need to identify novel methods of engagement which negotiate this barrier.

In undertaking this project we identified the following current and previous initiatives to identify woodland owners in relation to:

- completing the National Forest Inventory (FC GB Inventory and Forecasting)
- serving plant health notices (FC plant health teams)
- reviewing accessible greenspace in the High Weald AONB (see McKearnan and Grose 2007)
- targeting woodland creation and woodland-based enterprise in the Marches (FC NW team)
- work within the South Downs National Park (FC SE team)
- work within the South West region (FCE national and SW teams)
- work on a method by the Sylva Foundation (Yeomans et al 2008 study)

Unfortunately the methods and process followed and data-sets utilised to carrying out these pieces of work have not been formally recorded. However, where possible we have engaged with staff responsible for the initiatives in order to understand the processes and identify any lessons learnt by them (see Acknowledgements for a list of staff who contributed knowledge).

Overall, a relatively consistent and simple process has been followed, and these efforts have drawn variously on a limited core set of data-sources which we have reviewed.

Unfortunately, time and resources have been spent in each case identifying and accessing available data.

National Forest Inventory (NFI)

FC GB Inventory and Forecasting have undertaken an extensive exercise focused on gathering information on the identity and contact details of woodland owners throughout England, Wales and Scotland. This has been focused primarily on making contact with those owners of woodland within the NFI 1 km sample squares – in order to complete ground surveys[1]. We have gathered information on the IFOS team's experience and process through discussions with Ben Ditchburn and Esther Whitton. This has (a) validated the staged method proposed as an outcome of this project, and (b) provided useful additional information – such as that relating to the quality and usability of the CLAD+RLR data-set. As with others, unfortunately it appears that the IFOS process has not been recorded formally so there is a limited documentary audit trail for analysis in this project. However, the IFOS team followed a broadly similar process to that outlined in the method proposed by the project team, including the gathering of information through the use of maps with woodland managers (at RFS meetings). The effectiveness of this map-based exercise was variable, with significant information being gathered, which was sometimes of limited use in terms of *identifying* woodland owners, but which would have been useful in terms of social networks. For example, respondents would report knowing who an owner was and note when and where they encountered them, but could not recall their name.

Of particular interest is IFOS's use of the CLAD data-set as part of their survey. This was used extensively as a basis for contacting sample square woodland owners and whilst this was certainly productive, it revealed many data deficiencies within CLAD. For example, frequently records were out of date due to ownership change (inheritance or sale). A large number of returned contact letters were received indicating that the contact details were out of date or incorrect. In a very large proportion of cases, letters sent by the IFOS team received no response (e.g. as at February 2011, 45% of letters had prompted no response). In some areas the non-response rate was as high as 60%. Whilst this is not necessarily a reflection on the quality of data within CLAD, it does illustrate the limited use of 'mail-shots' as a communication method. Despite all this, as at February 2010, CLAD+RLR accounted for 24% of the knowledge of woodland ownership in England generated by the IFOS NFI process

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[1] As at February 2010 the IFOS process had generated ownership information on 58% of England's non-FC woodland. This varies considerably by region. To illustrate this, at February 2011, areas of England ranged from 3-52% of unknown ownership of woodland in sample squares. In the South West (which encompasses our project 'test' area, the rate of unknown ownership is high at 51%. Incidentally, the rate of permissions – that is positive responses to letters requesting access for woodland surveys – is 2/3 (66%). (IFOS Team presentation).

3. Method to Identify and Engage Land Managers

In this section we describe a staged method for collecting information relating to land-managers (particularly their identity and extent of 'engagement') within a specified landscape. This draws together lessons and processes from previous efforts with similar aims and has been tested 'on the ground'. It is designed as a robust generic method which can be implemented and adapted by a local end-user faced with the challenge of identifying and engaging managers in any UK landscape. At the core of the method are mapping and prioritisation activities drawing from a specified set of information sources. Research has shown these sources to be the most efficient and effective sources of information with which to achieve the objectives of identifying and/or engaging land-managers. As indicated above, the over-arching aim is to reveal sources of information about land-managers identity and identify 'pathways' via which significant additional proportions of land-managers can be engaged efficiently (in terms of resource input). The method is spatially referenced such that at each stage it is possible to map and describe numerically the proportion of woodland within the landscape that is 'engaged' (where the manager is known), 'networked' (they are within a known management network) and the proportion 'unengaged' (not known or in any known network). Woodlands in the landscape are thus classified into three primary categories - engaged; networked; unengaged.

Information relating to the woodlands and their management is sub-divided into 'data' and 'knowledge' in order to clarify the two primary streams of information about land-management. 'Data' is defined as information, usually in an electronic format (e.g. obtained from the internet or other digital source) – particularly spatially referenced woodland ownership or organisational membership information. 'Knowledge' is defined as woodland ownership or network information known by individuals, and usually obtained from people through meetings or interviews.

Some overarching issues for consideration within this method are:
  o **usability** - the method is designed for ease of use by practitioners such as Woodland Officers or similar staff, and to be replicable in any UK landscape,
  o **ethics** - there is a need to acknowledge managers' 'right' or desire **not** to be engaged where they choose, to operate within the boundaries of Data Protection rules, and to both describe and implement the method in an open and transparent manner,
  o **input** - effort, sources and ways in which to obtain information need to clearly documented,
  o **process** - information collection, collation, and storage are designed to be as simple as possible.

Outline of Method Stages
  1. Production of Base Map
  2. Ownership Data Collection - existing access
  3. Targeted Information Gathering - existing access
  4. Local Data Collection - solicited access
  5. Local Knowledge Gathering - solicited

In each stage of this method the user progresses from the identified and listed sources for that stage, through the production of output maps and data tables, to a prioritisation process (which should be adapted to local contexts and policy imperatives). **This process is illustrated in Figure 1**. At each stage, maps and data tables are produced characterising the woodland management landscape. These illustrate the proportion of categories of land-management (i.e. engaged; networked; unengaged) in the landscape subsequent to each increment of information collection. Further to this, at each stage brief analysis should be aimed at prioritising

effort (in subsequent stages) in relation to important woodlands. This will focus on key criteria (such as woodland type and block size; location). For example, all large woodland blocks falling into the category 'unengaged', and large and medium blocks adjacent to roads could be highlighted. It should be noted that it will not always be necessary to proceed through all five stages of this method before obtaining all the information required by the user. Prioritisation should establish the boundaries around data collection.

Figure 1 – Method Flow Chart
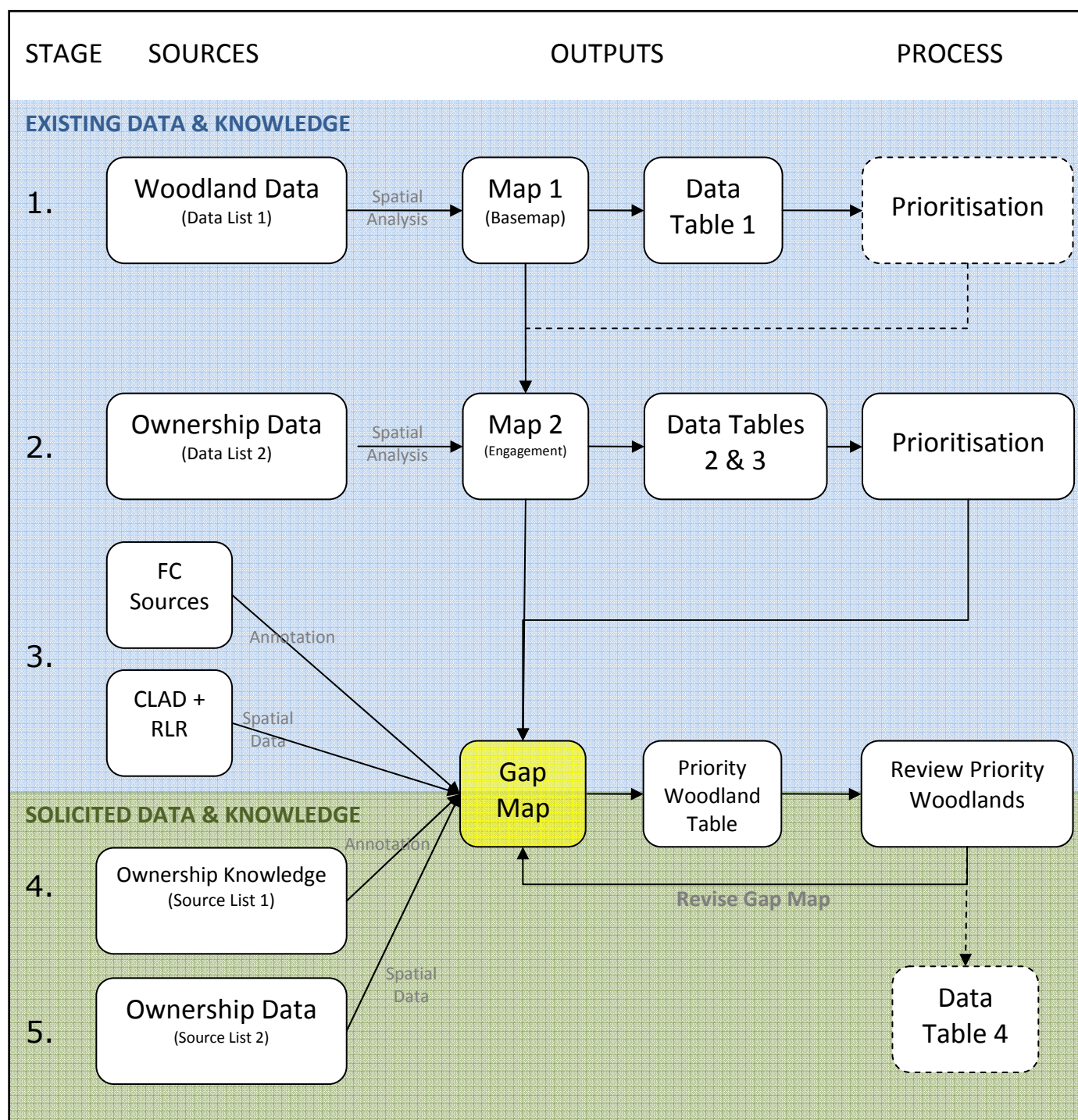
Stage 1 – Production of Base Map

This stage involves the construction of a map of the specified landscape capturing the key physical-environmental characteristics of the land and woodland within the specified landscape.

1.a Sources

Data
Required data:

- o **woodland presence / absence**
- o **woodland type** (by interpreted forest type(IFT) categories – conifer (C); broadleaved (B); mixed-conifer (Mc); mixed-broadleaved (Mb); coppice & coppice w/ standards (O & P); shrub (S); young trees (N); felled (F); prepared for new planting (G), Assumed woodland (Aw))
- o **background geography** (place and woodland names)
- o **road network**

Data List 1
The following sources can be used to obtain the required data:

Data List 1 - Production of Base-map						
Source Organisation	**Source Description**	**Data used**	**Source location**	**Availability [2]**		
				FC	**S**	**I**
Forestry Commission	National Forest Inventory (NFI)	Woodland presence / absence	Spatial data repository (SDR) FC.GB_NFI_MAP	✔	✔	
Forestry Commission	National Forest Inventory	Woodland Type (IFT)	(SDR) FC.GB_NFI_MAP	✔	✔	
Ordnance Survey	OS Raster	Watercourses and bodies; road network; place & woodland names	(SDR) OSRaster	✔	✔	

Table 1 – Data List 1

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[2] FC= data-set generally available within the Forestry Commission; S= data-set available via Forest Research's Spatial Data Repository; I= data-set available via the internet (e.g. on MAGIC website).

1.b. Outputs

Map 1 - Base Map

The base map illustrates the key physical-environmental dimensions of the landscape (see example – Figure 2 below). Using ArcGIS, National Forest Inventory (NFI) data is spatially dissolved (ArcGIS Dissolve Tool) to give contiguous polygons, either completely for presence/absence data or by Interpreted Forest Type (IFT). Statistics can then be created using the ArcGIS Summarize command. If the statistics for more than one field is being calculated then a dummy field in which each variable is appended, separation by a comma will be necessary. For mapping, the OS Raster is used as a basemap with NFI data placed on top. For clear identification it is suggested to adjust the transparency of the NFI layer (approx. 20%). In addition to the detailed statistical summary offered by Data Table 1 (see below), some basic statistics should be generated alongside this map, including:

- o total landscape area
- o total area of woodland (with figure for % of landscape coverage)
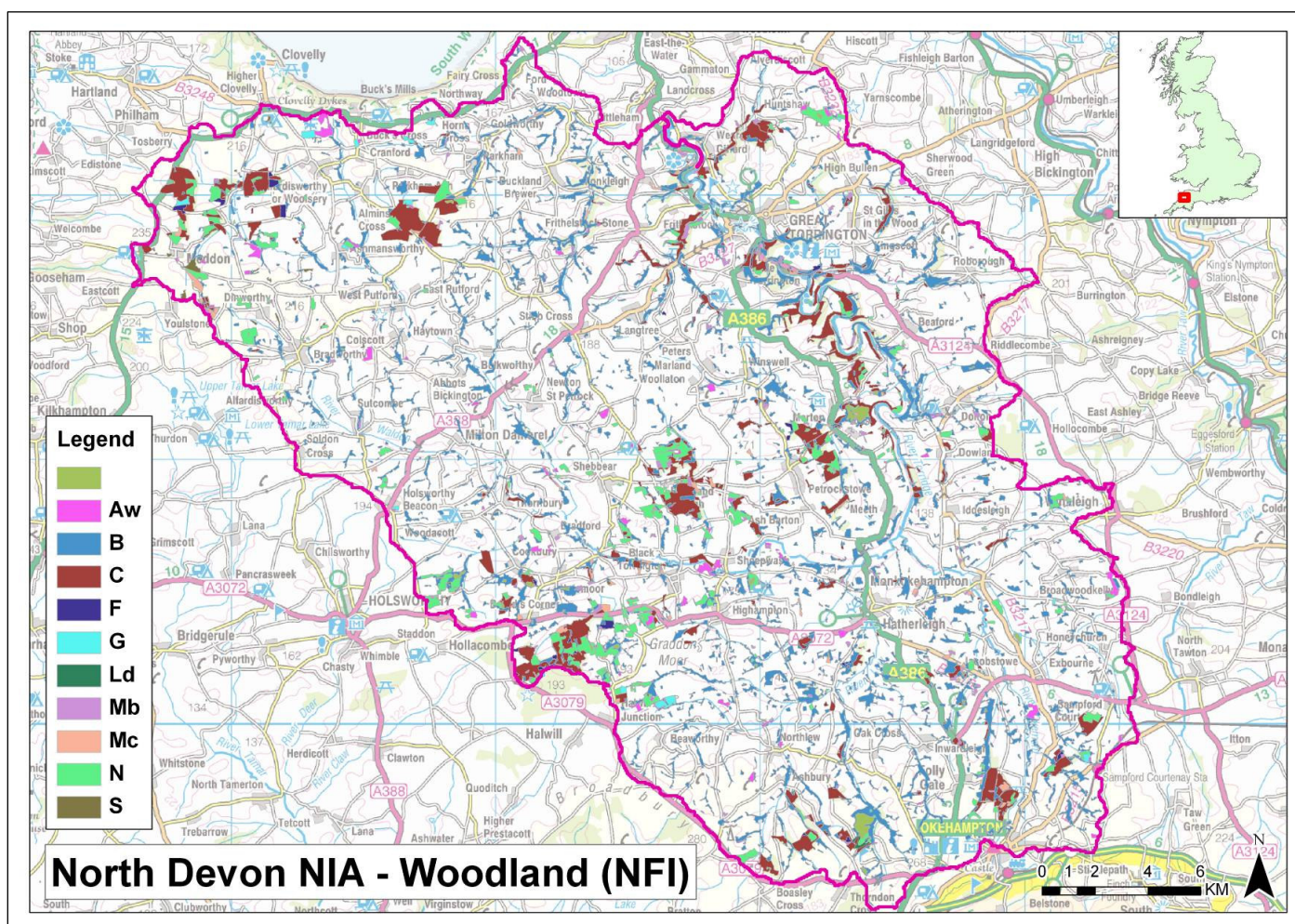
Figure 2 - Example Map 1 - Base Map, Woodland in the North Devon Nature Improvement Area (see Table 2, next page, for Key)

Data Table 1

Matrix detailing data displayed in Map 1 in terms of distribution of woodland types in to certain size categories.

Woodland Type	Block Size						Total
	<1ha Fragment	1-2ha Very Small	2-5ha Small	5-10ha Medium	10-25ha Large	>25ha Very Large	
Conifer (C)							
Broadleaved (B)							
Mixed – conifer (Mc)							
Mixed – broadleaved (Mb)							
Coppice (O) & Coppice with Standards (P)							
Shrub (S)							
Young Trees (N)							
Felled (F)							
Ground prepared for new planting (G)							
Assumed woodland (Aw)							
No category / unknown (x)							
Total							

Table 2 – Blank Example Data Table 1

Two data tables (or one combined table) are be required at this stage, populated by (i) woodland area (ha) and (ii) % of total woodland area. (See next page for examples)

Woodland Type	Block Size						Total
	Fragment <1ha	Very Small 1-2ha	Small 2-5ha	Medium 5-10ha	Large 10-25ha	Very Large >25ha	
X	24.11	14.64	24.83	6.21		75.81	145.59
Aw	62.32	51.98	61.96	80.53	76.86	29.99	363.66
B	394.19	635.58	1119.81	1187.64	1256.08	753.34	5346.65
C	38.81	111.56	187.09	276.84	547.85	1285.93	2448.08
F	3.66	11.46	36.45	25.28	22.58		99.42
G	2.36	1.89	22.25	39.32	33.90		99.73
Ld					10.21		10.21
Mb	43.15	76.99	121.82	20.02			261.98
Mc	21.41	39.43	89.09	40.83	16.41		207.16
N	31.30	58.49	186.10	322.47	412.40	261.63	1272.40
S	11.61	20.28	14.72	5.04	16.39		68.05
Total	632.93	1022.30	1864.11	2004.19	2392.69	2406.70	10322.92

Table 3 - Example Data Table 1a – Landscape Woodland by area (ha), North Devon Nature Improvement Area

Woodland Type	Block Size						Total
	Fragment <1ha	Very Small 1-2ha	Small 2-5ha	Medium 5-10ha	Large 10-25ha	Very Large >25ha	
X	0.23	0.14	0.24	0.06	0.00	0.73	1.41
Aw	0.60	0.50	0.60	0.78	0.74	0.29	3.52
B	3.82	6.16	10.85	11.50	12.17	7.30	51.79
C	0.38	1.08	1.81	2.68	5.31	12.46	23.71
F	0.04	0.11	0.35	0.24	0.22	0.00	0.96
G	0.02	0.02	0.22	0.38	0.33	0.00	0.97
Ld	0.00	0.00	0.00	0.00	0.10	0.00	0.10
Mb	0.42	0.75	1.18	0.19	0.00	0.00	2.54
Mc	0.21	0.38	0.86	0.40	0.16	0.00	2.01
N	0.30	0.57	1.80	3.12	4.00	2.53	12.33
S	0.11	0.20	0.14	0.05	0.16	0.00	0.66
Total	6.13	9.90	18.06	19.41	23.18	23.31	100

Table 4 - Example Data Table 1b – Landscape Woodland by percentage of total landscape woodland, North Devon Nature Improvement Area

1.c. Prioritisation

Prioritisation is possible at this stage of the method as it may be necessary or desirable to target specific woodlands by their physical characteristics. Potential aspects of prioritisation might include, for example, woodland proximity to roads (e.g. for woodfuel extraction) or watercourses (e.g. for riparian planting), topography of woodland, or woodland type (e.g. a focus on broadleaved woods for biodiversity objectives). Data sources that could be used for this include:

- o **Land CoverMap 2007** (Habitat Type, includes built environment types)
- o **Ordnance Survey Contours (50K)** (Topography)
- o **Agricultural Land Classification (ALC)** (agricultural land grade)
- o **Ancient Woodland areas**
- o **OS Raster** (road network, other geographical features)

1.d. Notes

The objective of this stage(and see Figure 1) is to create a Base Map and statistical resources which enable the method end-user to become familiar with the specified landscape and to assess their priorities in relation to the woodland resource. If this stage is being undertaken by someone other than the method end-user (e.g. a GIS technician based in Head Office), its outputs should be provided to the end-user for consideration prior to Stage 2 so that any prioritisation and targeting can be taken into account.

Stage 2 – Ownership Data Collation - existing access

This stage is the central phase of the method and comprises drawing on spatial ownership data to which the FC either has existing institutional access or which is otherwise publicly available (e.g. available for download from the internet) to overlay the landscape Base Map with information about the identity of managers and engagement status of woodlands. This can include FC data and that of some other public and third sector organisations. Two maps are produced during this stage – one indicating the extent of current knowledge of woodland manager identity and 'engagement' and the Gap Map (see below), which forms the centre-point of prioritisation and data collection during subsequent method stages.

2.a Sources

Data

Required spatial data includes:

- o woodland managed by the Forestry Commission
- o woodland provided grants by the Forestry Commission, Natural England or other DEFRA agency
- o woodland provided felling licence by Forestry Commission
- o woodland subject to another agreement with a Defra agency (e.g. Environmentally Sensitive Area or Wildlife Enhancement Agreements)
- o woodland managed by other public body (e.g. Ministry of Defence or Local Authority)or major public non-governmental organisation (e.g. National Trust, Woodland Trust, Wildlife Trust or RSPB)

This data is used to create seven categories of 'engaged' woodland – each of which informs the method end-user about either the identity of the woodland's manager (if a public body or major NGO) or which organisation will have an up-to-date (or recent) record of the woodland manager's identity. The categories are:

1. Forestry Commission managed woodland
2. Other publicly managed woodland
3. Woodland currently engaged with the Forestry Commission
4. Woodland currently engaged with Natural England
5. Woodland previously engaged with the Forestry Commission
6. Woodland previously engaged with Natural England
7. Woodland currently managed by known NGO (or major regional land-manager e.g. Duchy of Cornwall)

Data List 2

The following sources can be used to obtain the required data (table continues next page):

Data List 2 - data collection, existing access						
Source Organisation	**Source Description**	**Data used**	**Source location**	**Availability**		
				F C	**S**	**I**
Category 1 Engaged Woodland - Forestry Commission managed woodland						
Forestry Commission	FE Land Holding (freehold and leasehold)	Land managed by Forestry Commission	Sub-compartment database; F: Forest Enterprise Land; available via Mapping &Geodata		✓	✓ ✓
Category 2 Engaged Woodland - Other publicly managed woodland						
Ministry of Defence	--	Land owned by the Ministry of Defence	SDR: NONFC.E_MOD;		✓	✓
Local Authority		Woodland owned by the Local Authority		Variable availability		
Category 3 Engaged Woodland - Woodland currently engaged with the Forestry Commission						
Forestry Commission	EWGS Database	Land area provide grant under EWGS	SDR: FC.E_EWGS_CASE_BOUNDARY		✓	✓ ✓
Forestry Commission	Farm Woodland Premium Scheme Database	Land area provide grant under FWPS	FCE: Rob Pole		✓	
Category 4 Engaged Woodland - Woodland currently engaged with Natural England						

| Organisation	Dataset	Description	Code				
Natural England	ELS and HLS agreement records	Land area provided grant under environmental stewardship schemes	--				✓
Natural England	Protected Areas databases (SSSI, LNR, NNR)	Land designated for environmental protection	SDR: NONFC.E_NNR; NONFC.E_LNR; NONFC.E_SSSI; NONFC.E_SSSI_09	✓	✓		✓
Natural England	Scheduled Monument Records	Monument location	SDR: NONFC.E_SCH_MON	✓	✓		
Natural England	Countryside Stewardship Agreement	Land area provided Stewardship grant	SDR: NONFC.E_E_CSSAG	✓	✓		✓
Category 5 Engaged Woodland - Woodland previously engaged with the Forestry Commission							
Forestry Commission	Felling Licences Database	Land area granted felling licence or with application	SDR: FC.E_FLA	✓			✓
Forestry Commission	WGS 3 Database	Land area provide grant under WGS	SDR: FC.E_WGS1P; FC.E_WGS2P; FC.E_WGS3	✓	✓		✓
Category 6 Engaged Woodland - Woodland previously engaged with Natural England							
Natural England	Energy Crops scheme	Land provided grant under Energy Crops scheme	SDR: NONFC.E_ECS; NONFC.E_ECS_SECOND	✓	✓		✓
Category 7 Engaged Woodland - Woodland Currently Managed by Known NGO or other major regional land-manager							
National Trust	Reserves List	Land owned by National Trust	SDR: NONFC.E_NATIONAL_TRUST			✓	✓
Woodland Trust	Reserves List	Land owned by Woodland Trust	SDR: NONFC.GB_WOODLAND_TRUST			✓	✓
RSPB	Reserves List	Land owned by RSPB	SDR: NONFC.GB_RSPB_RES			✓	
Wildlife Trust	Reserves List	Land owned by Wildlife Trust	--				
[local NGO or manager]							

Table 5 – Data List 2

2.b. Outputs

Map 2 (Engagement), 'Gap Map' and Priority Woodland Table

Map 2 illustrates the extent of woodland manager 'engagement' through highlighting several categories of direct land-ownership along with other formal relations (agreements and designations). For each dataset add a unique variable or identifier (e.g.

MOD datalayer = MOD) with a value of 1. The datasets and the NFI information are merged using the ArcGIS Union Tool. Delete all variables, except the unique identifiers and any woodland information needed (e.g. IFT). At this stage any polygons without corresponding NFI data should be deleted. This dataset therefore contains a complete account of all engagements with woodland in the study area. In displaying the extent of coverage of these data sources, Map 2 illustrates existing engagement with key public bodies and land-management NGOs (see Figure 3 below for example). The mapping is further simplified by creating category variables (e.g. Forestry Commission managed woodland = CAT1), where the sum of unique identifiers is >=1 the category variable will equal 1, otherwise it will equal 0. Finally a category summary variable was added to show the stage at which the woodland was classified engaged (see 2.a Sources). Finally a map booklet, containing index and detailed maps, was produced using the ArcGIS Data Driven Maps Toolbox.
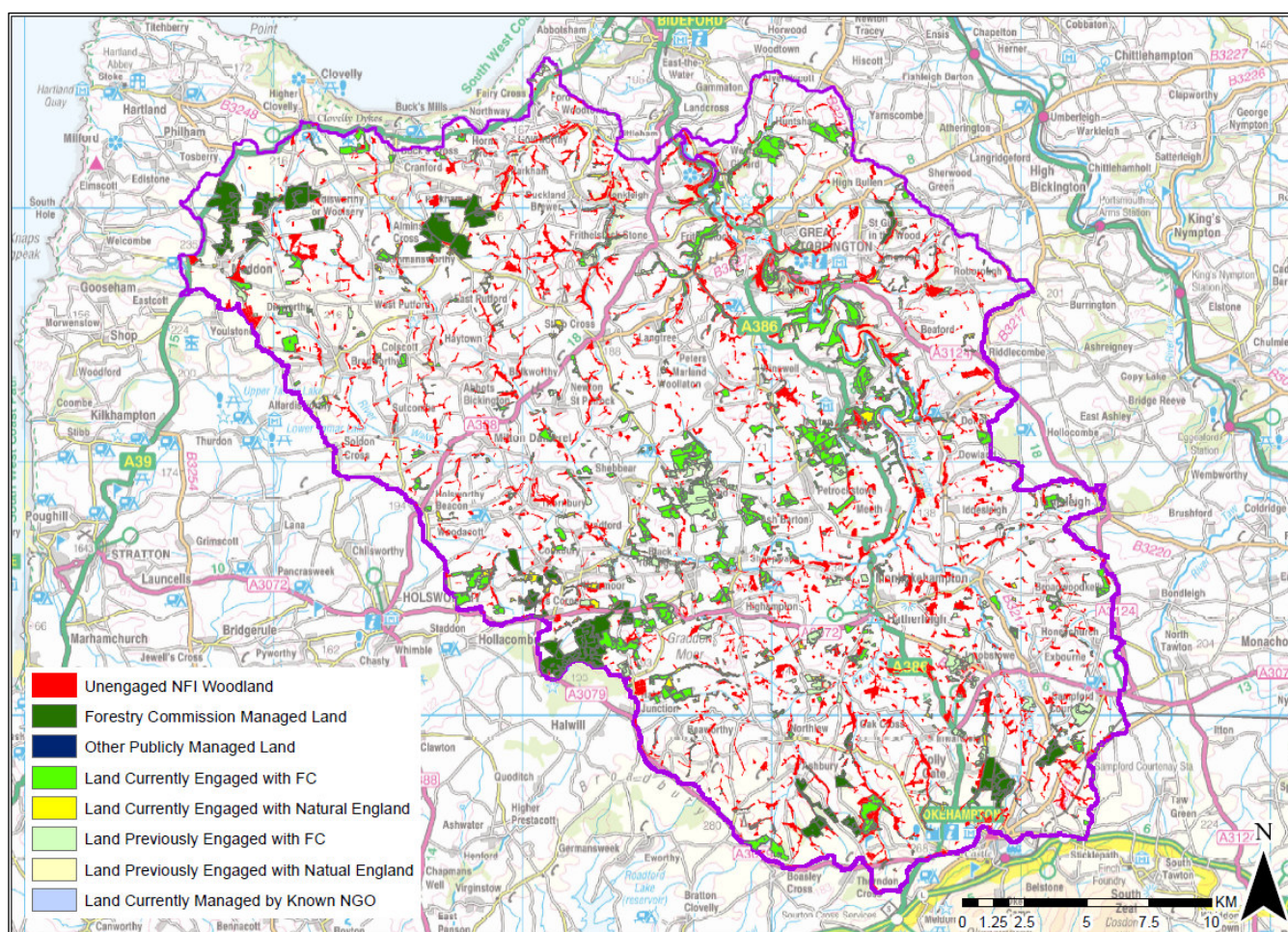
Figure 3 - Example Map 2 – Engagement, in the North Devon Nature Improvement Area

The data and analysis underpinning Map 2 should be used to create a **Gap Map** that shows the location of 'unengaged' woodlands – that is those woodlands NOT covered by the data utilised during this stage (see Figure 4 below, for an example). This Gap Map

forms the basis of future data collection and should be created at a scale at which place and woodland names, road networks and watercourses are clearly visible so as to assist those contributing knowledge during later stages of this process (e.g. 1:50,000). It is recommended that the Gap Map should be illustrated using an appropriate colouration scheme – such as a three tone 'traffic light' scheme (see Figure 4, which identifies all woodland over 5 ha as priority) – with primary thought given to management / policy priorities and objectives, and clarity of presentation to support future data collection. Once the Gap Map is produced, each priority woodland should be allocated an **identifier** so as to facilitate subsequent data collection. This identifier should be tabulated into a **Priority Woodland Table** along with other information required by the end-user (such as woodland type, size, location, other special characteristics) in a way most suitable for the end-user (an spreadsheet, such as Excel, is recommended).

Figure 4 - Example Gap Map – part, North Devon Nature Improvement Area

(Blue = engaged woodland; Red = unengaged woodland >5 ha; Yellow = unengaged woodland <5 ha)

Data Tables 2 & 3

Data Table 2 should be a matrix summarising data displayed in Map 2 (engagement), that is the total area of woodland currently engaged across the different categories should be calculated (see Table 6 below for example).

Engagement Category	Woodland Type										Total (ha)	Total (%)
	Aw	B	C	F	G	Ld	Mb	Mc	N	S		
Unengaged NFI Woodland	16	4196	262	4	7	3	131	93	79	52	4847	47.63
Forestry Commission Managed Woodland	10	98	1026	74	16		29	40	235	4	1535	15.09
Other publicly managed Woodland	0	0	0	0	0	0	0	0	0	0	0	0.00
Woodland Currently Engaged with FC	285	300	771	17	74	7	39	18	869	1	2385	23.44
Woodland Currently Engaged with NE	1	389	5	0.2	0	0	4	1	2	6	410	4.04
Woodland Previously Engaged with FC	49	361	382	2	1	0	58	53	84	2	996	9.79
Woodland Previously Engaged with NE	0	0	0	0	0	0	0	0	0	0	0	0.00
Woodland Currently Managed by Known NGO	0	0.6	0.4	0	0	0	0	0.02	0	0	1	0.01
Total	363	5346	2448	99	99	10	261	207	1272	68	10177	

Table 6 - Example Data Table 2 – Woodland area by engagement category (ha)

Data Table 3 should be a matrix summarising data relating to 'unengaged' woodlands only in the same format as Data Table 1(see Table 7, next page, for example).

2.c. Prioritisation

The Gap Map, along with Data Tables 2 and 3, should lead prioritisation at this stage. It is likely, for example, that in order to maximise cost effectiveness subsequent stages will likely need to prioritise the identification of larger woodlands. The Gap Map's colour scheme, such as a three tone 'traffic light' scheme, should be used to assist the method end-user. By combining the identification of gaps (i.e. unengaged woodlands) with held physical information regarding the woodlands and knowledge of policy priorities, additional colours (or colour tones) could be used to identify and stratify the prioritised 'target' woodlands.

Woodland Type	Block Size												Total		
	Fragment <1ha		Very Small 1-2ha		Small 2-5ha		Medium 5-10ha		Large 10-25ha		Very Large >25ha				
	Count	Total Area	Count	Total Area	Count	Total Area	Count	Total Area	Count	Total Area	Count	Total Area	Count	Area	%
Aw	2	0	1	1	1	5	2	11					6	17	0.33
B	1572	438	402	568	342	1064	134	926	58	816	11	412	2519	4226	83.6
C	980	78	32	44	11	31	13	90	2	27	1	26	1039	296	5.87
F	54	29	1	16									55	45	0.09
G	104	39					1	56					105	95	0.19
Ld							1	7					1	7	0.14
Mb	211	42	29	43	18	54							258	138	2.73
Mc	143	25	13	26	19	52	1	6					176	99	1.95
N	828	53	19	25	4	10	1	5	2	35			854	128	2.52
S	39	9	8	12	4	10	1	5	1	16			53	52	1.04
Total	3971	660	510	717	403	1237	154	1055	64	907	13	478	5115	5055	

Table 7 - Example Data Table 3 – Unengaged woodland by type (count & area (ha) combined)

2.d Notes

The objective at this stage is for the method end-user to have a clear understanding of the extent and distribution of current engagement within the specified landscape and, consequently, high quality information on the extent and distribution of 'unengaged' woodlands. The creation of the Gap Map is central to the method's effectiveness and it should therefore reflect clear prioritisation by the end-user. The Priority Woodland Table is a data recording tool and should be kept in electronic format so as to facilitate regular communication and update between the end-user and any centrally located mapping technician and/or information source.

Stage 3 –Targeted Information Gathering –'in-house' sources

This stage involves obtaining information from 'in-house' sources, namely FC staff such as Woodland Officers and the Rural Payments Agency's Customer and Land Database (CLAD). The aim at this stage is to validate the outputs from Stage 2 and contribute knowledge to address the priorities identified via the Gap Map. Gathering FC staff knowledge should be done via annotation of the 'Gap Map' (as per Instructions / Guidance in Appendix). **Obtaining ownership information from the NFI and CLAD**

databases should be done via requests with a designated administrator (located centrally in FC central services)[3].

3.a Sources

Data
Required data:
- o informal or otherwise unrecorded knowledge held by FC staff regarding the management and ownership of woodlands
- o ownership data held by FC IFOS and the Rural Payments Agency

Stage 3 Source List

The following sources can be used to obtain the required knowledge:
- o Woodland Officer (current and previous)
- o Area Manager
- o Grants Administrator
- o IFOS (survey sample square ownership information)
- o Customer and Land Database (Rural Payments Agency)

3.b. Outputs

Gap Map – Annotated/Revised and Priority Woodland Table - Updated
The primary outputs from this stage are annotated Gap Maps and a Priority Woodland Table populated with some ownership information. Depending on the amount of ownership information obtained from sources in this stage it may be necessary to produce a revised Gap Map, and potentially, for the end-user to revise their priorities.

Data Table 4
If relevant and useful, a revision of Data Table 3 (i.e. a matrix detailing remaining 'unengaged' woodlands)can be generated at this stage. This should detail woodland type and block distribution, populated by woodland area (ha).

3.c. Prioritisation

Depending on the amount of ownership information obtained from sources in this stage it may be necessary for the end-user to revise their priorities. This may be to include additional woodlands within their priorities.

3.d Notes

The objective at this stage of the method is to begin to use a combination of data sources and types to obtain ownership and/or woodland network information in relation to **target** woodlands that the method end-user has identified as high priority. This

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[3] At the scale at which this method is designed to be implemented (i.e. a Woodland Officer scale) it is unlikely to be appropriate or effective for the method end-user themselves to have open access to the CLAD database, as to do so would present significant data protection issues and substantial data handling and quality challenges.

targeting / prioritisation is critical to the cost effective use of time by the method's end-user because of the highly fragmented woodland and management landscapes, and the potentially over-whelming number of ownership records available in relation to these (from various sources). Data collection and recording is likely to be a significant challenge in this and later stages and therefore prioritisation and good data management (through, for example, the use of maps and spreadsheets) are essential. In particular it will be necessary to develop a process for placing requests for ownership information from the NFI and CLAD+RLR data-sets with central administrators in an effective manner appropriate to the method end-user. It is recommended that this is done using the Priority Woodland Table format to present a realistic set of requests. Requests must, therefore, relate to a manageable number of high priority woodlands.

Stages 4 and 5 should be undertaken simultaneously. This can be done in an effective manner, with review points set in advance at which to review data collected (e.g. monthly) . In particular, the method end-user may find it useful to approach certain organisations for both forms of information (i.e. electronic ownership 'data' and the knowledge of individual staff members) simultaneously.

Stage 4 –Local Data Collection - solicited access

This stage involves drawing on data to which the FC does not have existing institutional access but which partner organisations and the business sector agree to provide access to. These data sets should further inform the Gap Map with management information. This could include data from a variety of other public and third sector organisations.

To begin this stage the method end-user should list all local organisations and partnerships which may hold spatially referenced electronic data on woodland ownership, using Source List 1 as a guide.

4.a Sources

Data
Required data:
- o electronic land management data held by other bodies and to which the FC does not have existing access

Source List 1
The following sources are illustrative of the sources which can be used to obtain the required data:

Source List 1 - Data collection - solicited access		
Source Organisation	**Source Description**	**Data Description**
Forestry & Land Agents	Customer Lists	Manager identities and/or network linkages

Forestry Businesses	Customer lists	Manager identities and/or network linkages
Local Authority	TPO database Ownership data	TPO tree ownership list Land owned or managed by Local Authority
Biological Records Centre	Wildlife Site Lists	Wildlife site ownership information
Crown Estate	--	Land owned by Crown Estates
Royal Parks	--	Land managed by Royal Parks
Sylva Foundation	MyForest website	Self-registered woodland ownership information
Small Woods Association	Membership List	Manager identities and/or network linkages
woodlands.co.uk	Customer lists	Manager identities and/or network linkages
Utility companies	Ownership data	Land owned by utility companies
Research project institution or team]	Research contacts and data	Manager identities and/or network linkages

4.b. Outputs

Gap Map – Annotated/Revised and Priority Woodland Table - Updated
The primary outputs from this stage are further annotated Gap Maps resulting in the Priority Woodland Table being populated with additional ownership information. Depending on the amount of ownership information obtained from sources in this stage it may be necessary to produce a revised Gap Map, and potentially, for the end-user to revise their priorities (and consequently re-list their priority woodlands).

Data Table 4 - Revised
If relevant and useful, a revision of Data Table 3 (i.e. a matrix detailing remaining 'unengaged' woodlands)can be generated at this stage. This should detail woodland type and block distribution, populated by woodland area (ha).

4.c. Prioritisation

Depending on the amount of ownership information obtained from sources in this stage it may be necessary for the end-user to revise their priorities. This may be to include additional woodlands within their priorities.

4.d Notes

Many other organisations utilise electronic spatial land ownership data and the objective of this stage is to make use of that data where access to it can be agreed. This data is likely to comprise primarily of personal data records (such as membership and customer

details) and, as such, may be difficult to access. In such circumstances, approaching the organisations as part of Stage 5 is recommended, whereupon individuals in the organisations can share their information without jeopardising customer confidentiality, commercial sensitivities, or data protection standards.

Stage 5 –Local Knowledge Gathering - solicited access

This stage involves obtaining knowledge from external partners and colleagues, and organisations and individuals in the land-management sector operating within the specified landscape. This is likely to be one of the most significant stages in the method and will include obtaining usually inaccessible information from other public bodies, third sector organisations and forestry / land-management businesses via a combination of anonymised data-sharing, facilitated meetings and interviewing using the Gap Map. This stage emphasises collection of information about woodland networks in the specified landscape. Characteristics of woodlands (beyond ownership details, each indicating engagement via networks) relevant in this stage could include:

- o representation of manager by agent,
- o knowledge of a neighbouring owner or manager,
- o previous management work done in woodland by forestry business,
- o membership of a woodlands project (or similar collaboration),
- o membership of local, regional or national representative organisation (e.g. NFU; CLA; RSPB).

Gathering local knowledge should once again be done via annotation of the 'Gap Map' (as per Instructions / Guidance in Appendix). This can be done by post, but is likely to be more effective if done face-to-face. As a priority, the method end-user should organise to collect information from those sources highlighted in red in the list below.

5.a Sources

Data
Required data:
- o local land management knowledge held by individuals within other bodies

Source List 2
Individuals within the following organisations could be considered for consultation to obtain the required data:
- o Forestry Agents
- o Land-managers (i.e. farmers, estate managers, woodland owners)
- o Woodland Trust
- o Natural England
- o Wildlife Trust
- o Local Authority
- o Land Agents
- o Confederation of Forest & Timber Industries
- o Environment Agency

- o National Trust
- o Royal Society for the Protection of Birds
- o National Park Authority
- o Royal Forestry Society
- o Country Land and Business Association
- o Institute of Chartered Foresters
- o AONB Management Body
- o Biosphere Reserve Management Body
- o Nature Improvement Area Management Team
- o Deer Initiative
- o Local forestry businesses and/or contractors
- o Local deer management group
- o Local non-governmental organisation
- o Local land-management or farming partnerships and collaborations

5.b. Outputs

Gap Map – Annotated/Revised and Priority Woodland Table - Updated

The primary outputs from this stage are annotated Gap Maps and a Priority Woodland Table populated with some ownership information. Depending on the amount of ownership information obtained from sources in this stage it may be necessary to produce a revised Gap Map, and potentially, for the end-user to revise their priorities.

Data Table 4 - Revised

If relevant and useful, a revision of Data Table 3 (i.e. a matrix detailing remaining 'unengaged' woodlands)can be generated at this stage. This should detail woodland type and block distribution, populated by woodland area (ha).

5.c. Prioritisation

Depending on the amount of ownership information obtained from sources in this stage it may be necessary for the end-user to revise their priorities. This may be to include additional woodlands within their priorities.

5.d. Notes

The objective of this stage is to reveal ownership information and woodland network information through constructive feedback from individuals involved directly in land-management in the specified landscape. This is likely to be a substantial resource, but needs to be drawn on sensitively and within clear boundaries. Even very simple anonymised information can be useful at this stage (e.g. one woodland manager indicating that they know a neighbouring manager, but are not prepared to share personal information) as it can illustrate the extent of social networks in the specified landscape.

If, after exhausting all data collection options detailed in this method, there still exist high priority woodlands for which no management information has been obtained, the end-user should be aware of the option of a specific **Land Registry search**. These

searches currently cost £7.00 per individual land parcel, regardless of whether information is held (and therefore provided) by the Land Registry. This should be the option of last resort given its poor cost effectiveness.

4. Method Implementation, Coverage and Resources

Our work indicates that this method would most effectively be implemented on a wider scale through **responsibility for the stages being sub-divided between central spatial analysts and local Woodland Officer and spatial analysts at an Area level**. Stages 1 and 2 – up to the creation of a Gap Map - could most effectively be delivered by central analysts, provided they had appropriate prioritisation information either from Area staff, or national policy staff. This service could potentially be provided by FC GB IFOS, or alternatively by increased GIS capacity in national offices. Stage 3, 4 and 5, however, can only be delivered (indeed, are designed to be delivered) by local teams – albeit with requests made to central administrators.

4.1 Coverage at each stage

Ownership data collection in the North Devon Nature Improvement Area has not yet been completed in relation to all method stages, however some information regarding the extent of knowledge available for each stage is available.

Stage		Coverage in NIA test area	Cumulative total
2	Forest Commission data	48%	48%
	Natural England data	4%	52%
3	CLAD+RLR	22%	74% (63% 'target' woods only)
4	Other organisation data sets	n/a	n/a
5	Other individual knowledges	28% (of woods >5ha)	n/a

This shows that:
- the method user would have **ownership details** for just over half of the woodland (by area) within the specified landscape available from sources with existing access;
- the method user could potentially increase this to up to three-quarters (74%) of the woodland (by area) within the specified landscape if the CLAD+RLR database was **fully accurate and exploited**.
- individual agents, professionals and NGO staff are important sources of information.

Given data quality limitations and the scale of resource input required, achieving the proportion of knowledge from the CLAD+RLR data-set identified above is highly unlikely to be realised in practice. However, in the test landscape this data-set held ownership information relating to approximately 40% of the priority woodlands identified (those over 5 ha). Interrogating the CLAR+RLR data-set for these details alone would be manageable (*n*=242 woods) and have a potentially significant impact on knowledge in return for limited investment of resource (**increasing the cumulative total from 52% to 63%**).

Although it was clear that substantive information was available from local NGOs (such as the Biosphere Reserve secretariat) and previous research projects in the NIA area (such as records from the South-West Forest project) these full data sets could not be interrogated during the project for logistical reasons. Although some of this data is likely to be available in digital spatial files a large amount is held in paper files which would require considerable time to engage with.

Local agents and NGO staff provided a significant amount of knowledge regarding the target woodlands they were asked about. This often extended beyond knowing the identity of an owner or manager to having detailed knowledge of a particular woodland, its history and management. This included useful explanations as to why a woodland was classified as 'unengaged' or unmanaged.

Although a precise figure cannot be given, work analysing the woodland management social network in the NIA area (see Work Package 2 Final Report) indicates that fully implementing the method described here and engaging systematically could result in the user obtaining ownership and / or management information for between 80% and 90% of target woodlands in a landscape.

4.2 Resource Allocation

The project team has recorded time spent developing and implementing this method in order to guide managers in forecasting what resources might be required to deliver the method across the FC. We have had to undertake very substantial work (such as reviewing previous efforts, tracking down data and writing up the method) in addition to simply implementing the method, and the figures below are estimates.

Stage	Title	Time and Resource Requirements
1	Production of Base Map	**2 hours** ArcGIS software + competent user + appropriate access to data-sets
2	Ownership Data Collection - existing	**½ - 1 day**

	access	ArcGIS software + competent user + appropriate access to data-sets
3	Targeted Information Gathering - existing access	FC sources – **Allow 2 weeks from request**; Gap Map set and postage CLAD+RLR requests – n/a
4	Local Data Collection - solicited access	Untested during this project, but it is clear that substantial data is potentially available but could require significant time to transfer and prepare.
5	Local Knowledge Gathering - solicited	Forestry agent meeting – **½ day (following ½ day organisation / preparation**) Distribution to local NGOs – **½ day + 1 day** collating receipts. **Allow 2 weeks from request** Gap Map sets and postage

4.3. Notes on Key Data-sets

FC Grant Data
The Forestry Commission's own grants and licences data-sets are clearly the best source of information regarding the ownership and management of woodlands in any UK landscape. As such they, along with the FC's sub-compartment database which details FC managed land, should be at the core of any identification and engagement method. Specifically the EWGS and FWPS case-boundary data-sets, along with the WGS3 and Felling Licence data-sets, provide reliable and detailed information of currently and recently engaged woodland owners. In testing our method in Northern Devon these data-sets provided up to date information for nearly half (48%) of the landscape's woodland. Other data-sets provided a relatively much smaller proportion of information at less than 5%. WGS1 and WGS2 data-sets are not appropriate for use within a spatially referenced method for identifying woodland owners. They are point data-sets which do not demarcate ownership boundaries and will over-estimate – sometimes substantially – the extent of known ownership.

Natural England Data
A number of data-sets available from Natural England are of some use for identifying woodland ownership. In particular, some woodlands are included in ELS and HLS schemes, and there are a number of nature conservation designations which require Natural England to be engaged with woodland owners. In out Northern Devon 'test' area these data-sets provided information on just less than 5% additional woodland area.

CLAD & RLR
The Customer and Land Database (CLAD) and Rural Land Register (RLR) are two Rural Payment Agency (RPA) administered data sources which, when combined, for the most

substantial store of spatially referenced land-ownership data available in England and Wales. This data-set underpins the payment of all DEFRA-family agencies. However there are a number of significant problems associated with the direct use of CLAD+RLR within a general method to identify or engage land-managers. These include (1) data protection, (2) data quality, (3) questionable additionality and usefulness and (4) data deficiency. These problems mean that this data-set forms a secondary, rather than primary, resource within the proposed method – which relies primarily on the use of the DEFRA agency data sources which overlay it (i.e. FC grant data).

The CLAD part of this data-set contains numerous records of land-ownership and management in the form of names, addresses and business identifiers. This is 'personal' information which falls firmly under the auspices of the Data Protection Act 1998; and there are therefore significant barriers to sharing and otherwise making available this information. It would not be appropriate, for example, to have this data-set as an open access resource for all DEFRA agency staff such as Woodland Officers[4]. It would, however, be possible to utilise CLAD+RLR information in a targeted way within an FC method with the purpose of identifying and engaging woodland managers in relation to promoting forestry. We understand this use would have to be agreed between the FC and RPA. In order to maximise effectiveness and safeguard data protection, it is likely that any such use of CLAD+RLR would be best done centrally (i.e. by FC GB IFOS or country Head Office staff) without providing full access to the whole data-set for wider FC staff.

We therefore propose that within this method the CLAD+RLR data-set can most effectively be used within Stage 3 as a source of potential management information for the target 'unengaged' woodlands identified on the Gap Map. Testing in the Northern Devon NIA area suggests that the data-set could provide ownership information for just less than half (approximately 46%) of all 'unengaged' woodlands – although it is difficult to estimate what percentage of that information would be valid (i.e. current and correct).

This data-set could also potentially provide useful ownership information to underpin an adjacency analysis (whereby data relating to adjacent land parcels was used to infer ownership) and / or prioritisation process.

4.4. Lessons from Method Development Process

In developing the proposed method the project team have learnt a number of 'lessons' that require attention prior to any future implementation beyond the test area.

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[4] Currently only a single copy of CLAD is held within FCE, on an encrypted laptop computer.

Need for Improved Spatial Analysis Capacity

The implementation of this method requires spatial analysis skills which we have found are currently of limited availability in the Forestry Commission. Skilled analysts are very few and only available within centralised and specialised units (e.g. at FCE Head Office, Silvan House; Alice Holt), with other staff undertaking GIS analysis on a relatively *ad hoc* basis. In order for a method such as the one proposed to be cost-effective, capacity for spatial analysis will be required both centrally and locally.

Need for Improved co-ordination of and communication about ownership data

The various sources of ownership data are not managed as a coherent whole and significant advantages would be accrued from this. The project team has noted the decentralised and somewhat fragmented knowledge (and management) of this type of data (e.g. individual data-set managers; single copies of data-sets; a reliance on personal inter-organisational links; specific governance agreements for individual data-sets). From the 'outside' perspective of the project team, this appears to result in very restricted knowledge of the availability, usability and overall governance of such data. This knowledge is held in different pockets of the organisation, and with associated contrasting perceptions of who knows what. It also results in significantly differing levels of knowledge and understandings of (and approaches to) data protection amongst the individuals involved.

Data Protection – Barrier or not?

When dealing with personal data (such as the names, addresses and telephone numbers of land-managers) it is essential that data protection rules are taken seriously and practice guidelines followed. However, the project team's experience is that data protection rules are often perceived (often at an individual level) to be a barrier where in practice they are not (or should not be). Data protection demands sensitive and appropriate of personal data – with particular reference to the purpose for which data is being used. They should not be used as a barrier to careful and purposeful use of valuable information. More effective engagement with data protection rules and issues might be gained with the adoption of an over-arching data protection strategy in relation to ownership data and its use within this proposed method – rather than specific data use agreements relating to individual data-sets. Having said this, it is likely to be necessary to revise existing agreements to facilitate the use of certain data-sets in this method. In particular, use of the CLAD+RLR data set may require a specific agreement between the FC and the Rural Payments Agency[5].

Scale of Effort / Resource

Initial indications from this project work confirm the scale of the challenge of engaging with managers of an increasing proportion of woodlands in the UK and, consequently, the need to prioritise engagement effectively. In the 'test' landscape of the Northern

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[5] Conclusion based on conversation with Carol Hrynkiewicz (DEFRA).

Devon Nature Improvement Area, Stage 2 analysis reveals 3,700 woodland blocks to be 'unengaged'. The NIA area is only a part (roughly 1/3rd) of the current Woodland Officer's remit area and therefore it could be expected that in this and similar landscapes individual Woodland Officer's might have around 10,000 'unengaged' woodland blocks within their remit – clearly an unmanageable number even if the number of owners was substantially lower. The 3,700 woodland blocks in the 'test' area comprise just over 47% of the woodland area, with more than 80% of this woodland (by area) being broadleaved. However, even simple prioritisation can dramatically reduce the scale of the task. For example, in the 'test' area prioritising woodland of 5 ha or above reduces this number from 3,700 to 242 woodland blocks – but which comprise more than 26% of the total woodland area. Therefore, 'engaging' *all* of the managers of these 242 woodlands would increase engagement within this landscape to 79%.

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APPENDIX – Instructions for Gap Map based Exercise (Stages 3 & 5)

Instructions for Completing Map-based Woodland Network Exercise

You have 8 maps showing all the woodland within the North Devon Nature Improvement Area (based on the Forestry Commission's National Forest Inventory), along with a contents page indicating the map's overall layout. These maps show woodlands coloured according to three categories:

> **BLUE** = woodlands (of any size) owned by the Forestry Commission or within current (or recent) agreements or schemes with public bodies.
> **RED** = woodlands of 5 hectares or greater NOT owned by the Forestry Commission nor within current (or recent) agreements or schemes public bodies.
> **YELLOW** = woodlands of less than 5 hectares NOT owned by the Forestry Commission nor within current (or recent) agreements or schemes public bodies.

The map does not show woodland outside the boundary of the NIA area, even where this is contiguous with woodland inside the boundary.

The primary aim of this exercise is to gather information about your knowledge of the managers of the woodlands coloured in **RED**. For the purposes of this research, 'managers' include owners, tenants, forestry- or land-agents, estate managers, and organisations or companies (or their representatives or officials). In short, any individual or organisation that can contribute to the management of a woodland.

In order to complete the exercise please proceed through the following steps:

1. If **YOU** manage woodlands within the NIA, please locate all of the woodlands **YOU** manage or own and identify these with a tick (✓) or star (*). (If you are representing an organisation, please identify those woodlands managed or owned by the organisation);

2. Browse the maps looking particularly at the woodlands coloured **RED**;

3. Identify any **RED** woodlands of which you know the manager / owner by writing information on the map:

   a. use the manager / owner's name, their initials, a number, or other symbol marked on or adjacent to the woodland to which it refers

   b. if you know, please also note the individual's role (e.g. 'owner' or 'agent' (if you are uncertain about any of the information place a question mark (?) next to it);

4. Identify woodlands with the SAME manager / owner with the SAME name , initials, number, or symbol – or by drawing a circle around them with the identifier;

5. If there are YELLOW woodlands which you know to be managed or owned by a manager / owner of the RED woodlands you know, identify these also;

6. If you know TWO or more pieces of information about a woodland's manager / owner (e.g. the owner *and* agent, or owner *and* tenant) please identify them both noting their role alongside each (e.g. "Fred Bloggs=owner" and "Bill Smith=agent" OR "FB=owner" and "BS=agent");

7. If you know other or additional information about a woodland or links between other woodland managers / owners please add this to the map as a note (for example, you may know that two managers belong to the same family or are members of the same association).

An EXAMPLE of a map with information added is provided below.

You should complete and sign a Consent form to indicate your agreement to participate in this research project.

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