Forestry Commission England

Woodland Management Plan

Woodland Property Name	**Thwaite Brow**	
Case Reference	**39761**	
Plan Period dd/mm/yyyy (Ten years)	**Approval Date: 28/03/17**	**To: 28/03/27**
Five Year Review Date	**2022**	

Revision No.	Date	Status (draft/final)	Reason for Revision
The landowner agrees this plan as a statement of intent for the woodland			Yes

User Support

The functionality in this version of the management plan template has been downgraded to ensure compatibility with Word 2003.

This document is not protected and as such rows can be added & deleted from tables where needed.

UKFS Management Planning Criteria

Approval of this plan will be considered against the following UKFS criteria, prior to submission review your plan against the criteria using the check list below.

No.	UKFS Management Plan Criteria	Approval Criteria	Applicant Check
1	Forest management plans should state the objectives of management and set out how the appropriate balance between economic, environmental and social objectives will be achieved.	Have objectives of management been stated? Consideration given to economic, environmental and social factors (Section 2.2)	X
2	Forest management plans should address the forest context and the forest potential and demonstrate how the relevant interests and issues have been considered and addressed.	Does the management strategy (section 6) take into account the forest context and any special features identified within the woodland survey (section 4)	X
3	In designated areas, for example national parks, particular account should be taken of landscape and other sensitivities in the design of forests and forest infrastructure.	Have appropriate designations been identified (section 4.2) if so are these reflected through the work proposals in the management strategy (Section 6)	X
4	At the time of felling and restocking, the design of existing forests should be re-assessed and any necessary changes made so that they meet UKFS Requirements.	Felling and restocking are consistent with UKFS forest design principles (Section 5 of the UKFS)	X
5	Consultation on forest management plans and proposals should be carried out according to forestry authority procedures and, where required, the Environmental Impact Assessment Regulations.	Has consultation happened in line with current FC guidance and recorded as appropriate in section 7	X
6	Forests should be designed to achieve a diverse structure of habitat, species and ages of trees, appropriate to the scale and context.	Do the felling and restocking proposals create or improve structural diversity (refer to the plan of operations)	X
7	Forests characterised by a lack of diversity due to extensive areas of even-aged trees should be progressively restructured to achieve a range of age classes.	Do the felling and restocking proposals create or improve age class diversity (refer to the plan of operations)	X
8	Management of the forest should conform to the plan, and the plan should be updated to ensure it is current and relevant.	Has a 5 year review period been stated (1st page) and where relevant achievements recorded in section 3	X
9	New forests and woodlands should be located and designed to maintain or enhance the visual, cultural and ecological value and character of the landscape.	When new planting is being proposed under this plan is it consistent with UKFS and FC guidance on woodland creation	X

1. Property Details

Woodland Property Name		Thwaite Brow	
Name	Bolton-le-Sands Parish Council Mrs P Bradley (Secretary)	Owner Yes	
Email	blspc@hotmail.co.uk	Contact Number	-
Agent Name (if applicable)		Rebecca Oaks	
Email	Rebecca.oaks@btinternet.com	Contact Number	01524 781375
County	Lancashire	Local Authority	Lancaster City Council
Grid Reference	SD488687	Single Business Identifier	200072451
Management Plan Area (Hectares)		3.64	
Have you included a Plan of Operations with this management plan?		Yes	
List the maps associated with this management plan		Sub-compartment map 1 Constraints maps 2 Operations maps 3 Designations maps 4	
Do you intend to use the information within the management plan and associated plan of operations to apply for the following		Felling Licence	Yes
		Thinning Licence	Yes
		Woodland Regeneration Grant	No
Declaration of management control and agreement to public availability of the plan		Yes	

2. Vision and Objectives

To develop your long term vision, you need to express as clearly as possible the overall direction of management for the woodland(s) and how you envisage it will be in the future. This covers the duration of the plan and beyond.

2.1 Vision

Describe your long term vision for the woodland(s).

Thwaite Brow Woods are owned by Bolton-le-Sands Parish Council and managed by 'The Thwaite Brow Woods Conservation Project' a voluntary organisation made up of local people with an interest in conserving the woodlands. The vision is to protect and enhance the woodlands primarily for wildlife but also for people's recreation and education. The broadleaved nature of the woods will be maintained and small scale exploitation of the timber resource for wood products and firewood where this is indicated by the requirements of good woodland management practice.

2.2 Management Objectives

State the objectives of management demonstrating how sustainable forest management is to be achieved. Objectives are a set of specific, quantifiable statements that represent what needs to happen to achieve the long term vision.

No.	Objectives (include environmental, economic and social considerations)
1	To maintain and enhance the priority broadleaved woodland habitat and the species associated with it.
2	Produce a crop of firewood from a thinning/coppicing regime that will encompass best practice for optimum tree cover and development.
3	To maintain and improve the access to the woodlands through providing footpaths and managing informal use which might have a detrimental effect on wildlife.
4	To maintain the important landscape qualities provided by the woodland in this semi urban situation.
5	Provide an educational resource for local schools and community groups to use.
6	Maintain the boundaries to exclude grazing animals and to monitor and manage impact of wild deer populations on tree regeneration and woodland species.

3. Plan Review - Achievements

Use this section to identify achievements made against previous plan objectives. This section should be completed at the 5 year review and could be informed through monitoring activities undertaken.

Objectives	Achievement
To maintain and enhance the priority broadleaved woodland habitat and the species associated with it.	None yet first plan
Produce a crop of firewood from a thinning/coppicing regime that will encompass best practice for optimum tree cover and development.	None yet first plan
To maintain and improve the access to the woodlands through providing footpaths and managing informal use which might have a detrimental effect on wildlife.	None yet first plan
To maintain the important landscape qualities provided by the woodland in this semi urban situation.	None yet first plan
Provide an educational resource for local schools and community groups to use.	None yet first plan
Maintain the boundaries to exclude grazing animals and to monitor and manage impact of wild deer populations on tree regeneration and woodland species.	None yet first plan

4. Woodland Survey

This section is about collecting information relating to your woodland and its location, including any statutory constraints i.e. designations.

4.1 Description

Thwaite Brow Wood is a mixed broadleaf woodland on a rise that looks out across the village of Bolton-le-Sands north west towards Morecambe Bay. The woodland is boundaried on the west side by the Lancaster to Kendal canal and adjacent to the wood is grade II listed bridge 'Lancaster Canal Bolton Cinder Oven Bridge' this refers to the Coke Ovens that were sited close to the woodland and are of historical importance themselves. To the east, north and south are agricultural fields mainly grazed by horses. The woodland comprise two halves one was a plantation established in the mid 19c, Crawstone woods which has many fine mature trees, beech, oak, sycamore and ash. The woodland that adjoins the canal is secondary woodland, it is common land and was previously grazed with cattle and mined for gravel. The closed canopy tree cover has established since the Second World War. There are some notable native species present including some rarities such as Sand Leek (*Allium scorodoprasum*), Spurge laurel (*Daphne laureola*) Travellers Joy (*Clematis vitalba*). The woodlands are considered High priority for woodland improvement under the Countryside Stewardship Scheme.

4.2 Information

Use this section to identify features that are both present in your woodland(s) and where required, on land adjacent to your woodland. It may be useful to identify known features on an accompanying map. Woodland information for your property can be found on the Magic website or the Forestry Commission Land Information Search.

Feature	Within Woodland(s)	Cpts	Adjacent to Woodland(s)	Map No
Biodiversity- Designations				
Site of Special Scientific Interest	No		No	
Special Area of Conservation	No		No	
Tree Preservation Order	No		No	
Conservation Area	No		No	
Special Protection Area	No		No	
Ramsar Site	No		No	
National Nature Reserve	No		No	
Local Nature Reserve	No		No	
Other (please Specify):	Yes	All	Yes	1
Notes	County Biological Heritage Site			

Feature	Within Woodland(s)	Cpts	Map No	Notes

Biodiversity - European Protected Species					
Bat	Species (if known)	Yes	All	1	All species of bats possible feeding on site
Dormouse		No			
Great Crested Newt		No			
Otter		No			
Sand Lizard		No			
Smooth Snake		No			
Natterjack Toad		No			
Biodiversity – Priority Species					
Schedule 1 Birds	Species: Kingfisher	Yes	1	1	Using the canal bank for nesting
Mammals (Red Squirrel, Water Vole, Pine Marten etc)		No			
Reptiles (grass snake, adder, common lizard etc)		No			
Plants		No			
Fungi/Lichens		No			
Invertebrates (butterflies, moths, beetles etc)		No			
Amphibians (pool frog, common toad)		No			
Other (please Specify):		Yes/No			
Historic Environment					
Scheduled Monuments		No			
Unscheduled Monuments		No			
Registered Parks and Gardens		No			
Boundaries and Veteran Trees		Yes			Some notable trees
Listed Buildings		Yes			Lancaster canal cinder bridge adjacent
Other (please Specify):		Yes/No			
Landscape					
National Character Area (please Specify):					
National Park		No			
Area of Outstanding Natural Beauty		No			
Other (please Specify):		Yes/No			
People					
CROW Access		No			
Public Rights of Way (any)		No			
Other Access Provision		Yes			Common land access under the

				rights of way act 2005
Public Involvement	Yes			Thwaite Brow Wood Conservation Project
Visitor Information	Yes			Interpretation board
Public Recreation Facilities	Yes			
Provision of Learning Opportunities	Yes			
Anti-social Behaviour	Yes			Some informal use with bikes which has done some damage to paths. Unauthorised fires affecting trees.
Other (please Specify):	Yes/No			
Water				
Watercourses	Yes	1	1	Canal adjacent to woodland
Lakes	No			
Ponds	No			
Other (please Specify):	Yes/No			

4.3 Habitat Types

This section is to consider the habitat types within your woodland(s) that might impact/inform your management decisions. Larger non-wooded areas within your woodland should be classified according to broad habitat type where relevant this information should also help inform your management decisions. Woodlands should be designed to achieve a diverse structure of habitat, species and ages of trees, appropriate to the scale and context of the woodland.

Feature	Within Woodland(s)	Cpts	Map No	Notes
Woodland Habitat Types				
Ancient Semi-Natural Woodland	No			
Planted Ancient Woodland Site (PAWS)	No			
Semi-natural features in PAWS	No			
Lowland beech and yew woodland	No			
Lowland mixed deciduous woodland	Yes			Plantation of beech,oak,etc

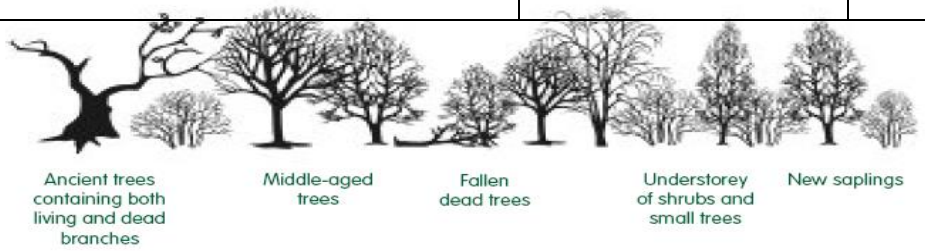
Upland mixed ash woods	No			
Upland Oakwood	No			
Wet woodland	No			
Wood-pasture and parkland	No			
Other (please Specify):	Yes/No			
Non Woodland Habitat Types				
Blanket bog	No			
Fenland	No			
Lowland calcareous grassland	No			
Lowland dry acid grassland	No			
Lowland heath land	No			
Lowland meadows	No			
Lowland raised bog	No			
Rush pasture	No			
Reed bed	No			
Wood pasture	No			
Upland hay meadows	No			
Upland heath land	No			
Unimproved grassland	No			
Peat lands	No			
Wetland habitats	No			
Other (please Specify):	Yes/No			

4.4 Structure

This section should provide a snapshot of the current structure of your woodland as a whole. A full inventory for your woodland(s) can be included in the separate Plan of Operations spreadsheet. Ensuring woodland has a varied structure in terms of age, species, origin and open space will provide a range of benefits for the biodiversity of the woodland and its resilience. The diagrams below show an example of both uneven and even aged woodland.

Woodland Type (Broadleaf, Conifer, Coppice, Intimate Mix)	Percentage of Mgt Plan Area	Age Structure (even/uneven)	Notes (i.e. understory or natural regeneration present)
Broadleaf	50	uneven	Higher light levels on the edge of the wood and steep slopes have allowed quite good regeneration of trees and a mixed structure
Broadleaf	50	even	High forest section of the plantation has restricted the light levels within the wood and suppressed the shrub layer

Uneven-aged woodland – many wildlife habitats because of high diversity



Even-aged woodland – tidy but of low diversity

5. Woodland Protection

Woodlands in England face a range of threats; this section allows you to consider the potential threats that could be facing your woodland(s). Using the simple Risk Assessment process below woodland owners and managers can consider any potential threats to their woodland(s) and whether there is a need to take action to protect their woodlands.

5.1 Risk Matrix

The matrix below provides a system for scoring risk. The matrix also indicates the advised level of action to take to help manage the threat.

Impact	High	Plan for Action	Action	Action
	Medium	Monitor	Plan for Action	Action
	Low	Monitor	Monitor	Plan for Action
		Low	Medium	High
		Likelihood of Presence		

5.2 Plant Health

Threat (e.g. Ash Dieback, *Phytophthora,* Needle Blight etc)	Ash Dieback *Chalara or Hymenoscyphus fraxineus*
Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Low (not many ash trees within the wood)
Response (inc protection measures)	Monitor and retain ash to see if resistant. There is a low occurrence of ash in the woodland. It is important to create opportunities for ash present to regenerate from seed which may prove resistant to Ash Dieback

Threat (e.g. Ash Dieback, *Phytophthora,* Needle Blight etc)	Acute Oak Decline
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Keep abreast with latest strategies to combat this complex issue

Threat (e.g. Ash Dieback,	Horse chestnut blight

Phytophthora, Needle Blight etc)	
Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Medium
Response (inc protection measures)	Keep abreast with latest strategies to combat this complex issue

5.3 Deer

Likelihood of presence (high/medium/low)	High – red and roe present
Impact (high/medium/low)	Medium
Response (inc protection measures)	Appointing someone to stalk on site should be a priority and deer numbers monitored and controlled to maintain a healthy population and allow all woodland species and natural regeneration to thrive.

5.4 Grey Squirrels

Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	High
Response (inc protection measures)	Control grey squirrels on site

5.5 Livestock and Other Mammals

Threat (Sheep, Horse, Rabbit etc)	Mainly horses in adjacent fields and the fences at present are sufficient but if sheep grazing pressures were high on adjoining fields then replacement of stock fencing around the wood would be necessary. At present it is a partially functional wrought iron post and rail fence.
Likelihood of presence (high/medium/low)	Low
Impact (high/medium/low)	High
Response (inc protection measures)	Maintain boundaries to exclude stock

5.6 Water & Soil

Threat (Soil Erosion, Pollution, Acidification of Water etc)	Some erosion due to overuse of popular areas may be observed. But mainly this is not a

	problem.
Likelihood of presence (high/medium/low)	Low
Impact (high/medium/low)	Low
Response (inc protection measures)	Maintain a varied network of paths and encourage the public pressure to be spread around the site.

5.7 Environmental

Threat (Pollution, Fire, Flood, Wind, Invasive Species, Anti-social Behaviour etc)	Wind blow
Likelihood of presence (high/medium/low)	medium
Impact (high/medium/low)	low
Response (inc protection measures)	Protect the woodland from grazing and encourage a shrub layer to form which will provide a new generation of trees to replace the old trees as they fall. Avoid opening up gaps on the windward side where damage may be done in high wind situations

Threat (Pollution, Fire, Flood, Wind, Invasive Species, Anti-social Behaviour etc)	Anti-social behaviour
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Medium
Response (inc protection measures)	Keep up good relations with local people and community engagement to ensure that there is a local presence that will monitor behaviour detrimental to the woodland and report of incidents as they occur.

Threat (Pollution, Fire, Flood, Wind, Invasive Species, Anti-social Behaviour etc)	Invasive species
Likelihood of presence (high/medium/low)	High
Impact (high/medium/low)	Medium
Response (inc protection measures)	Control with herbicides or constant cutting and root removal; species such as Rose of Sharon,

	Cotoneaster, Snowberry

5.8 Climate Change Resilience

Threat (Uniform Structure, Provenance, Lack of Diversity etc)	Uniform Structure
Likelihood of presence (high/medium/low)	Medium
Impact (high/medium/low)	Low
Response (inc protection measures)	Responsible management (thinning, coppicing, stock exclusion and deer management) to promote regeneration and create a diverse structure.

Threat (Uniform Structure, Provenance, Lack of Diversity etc)	Lack of Diversity
Likelihood of presence (high/medium/low)	Low
Impact (high/medium/low)	Medium
Response (inc protection measures)	Encourage species diversity including tolerance of honorary natives where native species are limited or under threat.

6. Management Strategy

This section requires a statement of intent, setting out how you intend to achieve your management objectives and manage important features identified within the previous sections of the plan. A detailed work programme by sub-compartment can be added to the Plan of Operations.

Management Obj/Feature	Management Intention
To maintain and enhance the priority broadleaved woodland habitat and the species associated with it.	• Thin the trees to increase the light levels at ground level where the canopy is closed and shading too extreme • Halo thin around important species such as whitebeam, wych elm to allow good development of these trees • Create canopy gaps or coppice glades and protect with temporary fencing to ensure good regrowth • Protect regeneration from grazing and browsing to allow a healthy shrub layer to develop • Maintain deadwood within the woodland to provide a habitat for species that feed on decaying wood and a food source for species higher up the food chain • Be alert to non-native and invasive species (Rose of Sharon, Cotoneaster, Snowberry) • Protect notable and over mature trees and thin around them to maximise lifespan and safeguard the wide range of species associated with mature trees.
Produce a crop of firewood from a thinning/coppicing regime that will encompass best practice for optimum tree cover and development.	The woods require some thinning to open up the canopy, to promote good development of the trees and allow more light to the woodland floor. This thinning regime and clearing of fallen trees where they effect the fencing or paths should produce more fuelwood than can be used by the volunteers. Consider a community woodfuel scheme to increase demand and step up management within the wood or contract out some of the work to qualified wood merchants.
To maintain and improve the access to the woodlands through providing footpaths and managing informal	The track through the wood has a basis of hard standing and should be kept clear of debris to allow vehicular access through the woodland.

use which might have a detrimental effect on wildlife.	Other paths are just pedestrian but where possible should be maintained to allow ATV access to enable removal of timber. Some of the benches are positioned to enjoy views from the woodland and these clearings should be maintained to enhance the visitor experience of the woodland. Further open space and benches could be created within the woodland. Consider the needs of people with reduced mobility or mobility aids or pushchairs and make provision for safe access
To maintain the important landscape qualities provided by the woodland in this semi urban situation.	Coppice cutting will be fairly small scale coups 20m x20m max on the edges of the woodland to minimise the impact of tree felling on the overall outline of the woodland.
Provide an educational resource for local schools and community groups to use.	Very important to engender a culture of care and value for the woodland in the next generation.
Maintain the boundaries to exclude grazing animals and to monitor and manage impact of wild deer populations on tree regeneration and woodland species.	Fencing is at present sufficient but monitor and maintain stock proofing throughout the lifespan of the plan

7. Stakeholder Engagement

There can be a requirement on both the FC and the owner to undertake consultation/engagement. Please refer to Operations Note 35 for further information. Use this section to identify people or organisations with an interest in your woodland and also to record any engagement that you have undertaken, relative to activities identified within the plan.

Work Proposal	Individual/ Organisation	Date Contacted	Date feedback received	Response	Action
Woodland plan and felling licence	Parish council	22/12/16	None recieved		
Woodland plan and felling licence	Thwaite Brow Woods Conservation Group Louise Belcher	5/12/16	22/12/16	Happy with the plan	
Woodland plan and felling licence	Maxine Knagg LCC tree officer	19/01/17	07/02/17	Happy with the plan	

8. Monitoring

Indicators of progress/success should be defined for each management objective and then checked at regular intervals. Other management activities could also be considered within this monitoring section. The data collected will help to evaluate progress.

Management Objective/Activities	Indicator of Progress/Success	Method of Assessment	Frequency of Assessment	Responsibility	Assessment Results
To maintain and enhance the priority broadleaved woodland habitat and the species associated with it.	Healthy and diverse species maintained and enhanced	Site visit	Annual	Thwaite Brow Woods conservation Project	Adjust plan to address specific issues
Produce a crop of firewood from a thinning/coppicing regime that will encompass best practice for optimum tree cover and development.	Timber income available for further improvements	Site visit	Annual	Thwaite Brow Woods conservation Project Owner	Adjust levels of timber extracted to meet demand but consider selling some firewood or timber when capacity allows
To maintain and improve the access to the woodlands through providing footpaths and managing informal use which might have a detrimental effect on wildlife.	Safe and accessible environment for public enjoyment	Site visit	Annual	Thwaite Brow Woods conservation Project	Adjust plan if required
To maintain the important	Landscape qualities	Site visit	Annual	Thwaite Brow	Adjust plan if required

landscape qualities provided by the woodland in this semi urban situation.	preserved			Woods conservation Project	
Provide an educational resource for local schools and community groups to use.	Regular use by schools of this local resource	Site visit	Annual	Thwaite Brow Woods conservation Project Owner	Adjust plan if required
Maintain the boundaries to exclude grazing animals and to monitor and manage impact of wild deer populations on tree regeneration and woodland species.	Stock excluded	Site visit	Annual	Thwaite Brow Woods conservation Project	Adjust plan if required

FC Approval – FC Office Use Only

UKFS Management Plan Criteria	Approval Criteria	Achieved	Notes
Forest management plans should state the objectives of management, and set out how the appropriate balance between economic, environmental and social objectives will be achieved.	Have objectives of management been stated? Consideration given to economic, environmental and social factors (Section 2.2)	Yes	
Forest management plans should address the forest context and the forest potential, and demonstrate how the relevant interests and issues have been considered and addressed.	Does the management strategy (section 6) take into account the forest context and any special features identified within the woodland survey (section 4)	Yes	
In designated areas, for example national parks, particular account should be taken of landscape and other sensitivities in the design of forests and forest infrastructure.	Have appropriate designations been identified (section 4.2) if so are these reflected through the work proposals in the management strategy (Section 6)	Yes	
At the time of felling and restocking, the design of existing forests should be re-assessed and any necessary changes made so that they meet UKFS Requirements.	Felling and restocking are consistent with UKFS forest design principles (Section 5 of the UKFS)	Yes	
Consultation on forest management plans and proposals should be carried out according to forestry authority procedures and, where required, the Environmental Impact Assessment Regulations.	Has consultation happened in line with current FC guidance and recorded as appropriate in section 7	Yes	
Forests should be designed to achieve a diverse structure of habitat, species and ages of trees, appropriate to the scale and context.	Do the felling and restocking proposals create or improve structural diversity (refer to the plan of operations)	Yes	
Forests characterised by a lack of diversity due to extensive areas of even-aged trees should be progressively restructured to achieve a range of age classes.	Do the felling and restocking proposals create or improve age class diversity (refer to the plan of operations)	Yes	
Management of the forest should conform to the plan, and the plan should be updated to ensure it is current and relevant.	Has a 5 year review period been stated (1st page) and where relevant achievements recorded in section 3	Yes	
New forests and woodlands should be located and designed to maintain or enhance the visual, cultural and ecological value and character of the landscape.	When new planting is being proposed under this plan is consistent with UKFS and FC guidance on woodland creation	Yes/No	

Approving Officer Name	Andy Bennett	Plan approved	Yes